Loyola College 1965 1966

COLLEGIUM · IHS · LOYOLAEUM · MONTE REGIO

MONTREAL, CANADA

General Calendar

Loyola College calendar

ARTS • SCIENCE • ENGINEERING • COMMERCE

RDWilson '65

Ad Maiorem Dei Gloriam

1965 - 1966

table of contents

ACADEMIC CALENDAR 1965-1966

S U M M E R
1 9 6 5

MAY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

JUNE

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

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S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

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S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

W I N T E R
1 9 6 5 - 6

SEPTEMBER

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

OCTOBER

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

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S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

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S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

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S	M	T	W	T	F	S
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2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

FEBRUARY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

MARCH

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

APRIL

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

academic calendar 1965-66

Thursday, July 1

Last day for making appeal to have an examination paper reviewed.

Thursday, July 15

Last day for returning preregistration form.
Last day for making application for supplemental examinations.
Last day for making appeal to repeat a year.

Monday, August 16

Schedule for supplemental examinations will be posted.

Monday, August 23

Supplemental examinations begin.

Monday, September 13

Registration of Second, Third and Fourth Year Arts Students : 1:00 to 5:00 p.m.

Tuesday, September 14

Freshmen Academic Orientation : 9:30 a.m.
Registration of Second, Third and Fourth Year Commerce students : 1:00 to 5:00 p.m.

Wednesday, September 15

Freshmen Academic Orientation : 9:30 a.m.
Registration of Second, Third and Fourth Year Science and Engineering students : 1:00 to 5:00 p.m.

Thursday, September 16

Registration of Freshmen Arts and Freshmen Engineering students : 9:30 a.m.

Friday, September 17

Registration of Freshmen Commerce and Freshmen Science students 9:30 a.m.

Monday, September 20

Lectures begin.

Friday, October 1

Last day for Registration.

Friday, October 8

Last day for course changes.

Monday, October 11
Thanksgiving Day — full holiday.

Thursday, November 11
1.00 p.m. — Anniversary Mass for the deceased members of the staff and students.

Tuesday, December 14
Last day of Freshmen lectures before Christmas vacation.

Wednesday, December 15
Freshmen mid-year tests begin.

Wednesday, December 22
Last day of lectures before Christmas vacation.

1966

Tuesday, January 4
Mid-year final examinations begin in all faculties.

Monday, January 10
Second term lectures begin.

Friday, January 28
Father President's Holiday.

Friday, March 11
Celebration of the Feast of St. Ignatius Loyola.

Wednesday, April 6
Last day of lectures before Easter recess.

Tuesday, April 12
Lectures resumed.

Friday, April 15
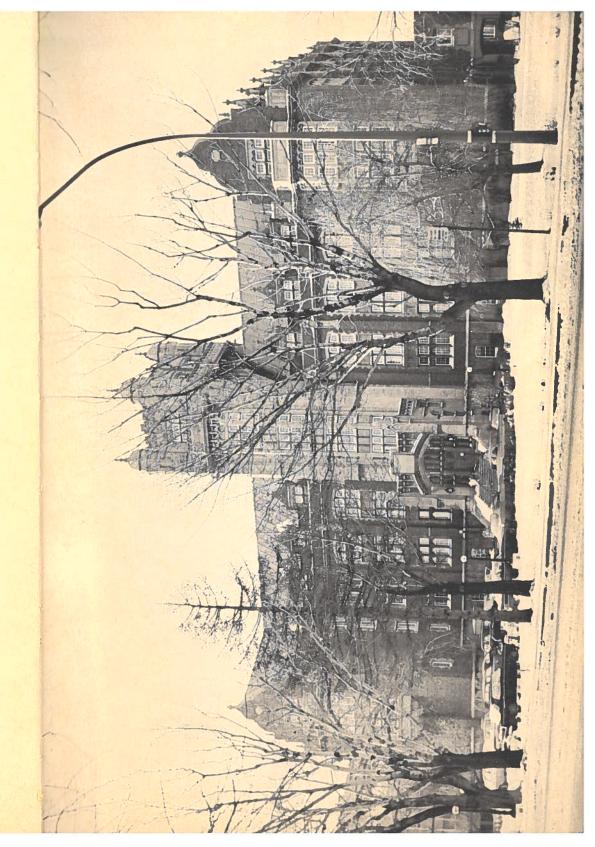Last day of lectures.

Monday, April 18
Final examinations begin.

Tuesday, May 17
Last day for submitting documents needed to justify appeal for aegrotat standing and special examinations.

Wednesday, May 25
Convocation.

the board of trustees

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 E. O'Brien, S.J.
 R. S. Wareham
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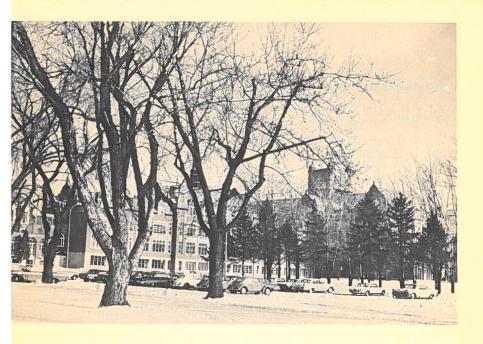 C. E. Eappen
 K. Ekler
 D. E. McElcheran
 R. E. O'Connor, S.J.
Faculty of Commerce —
 R. L. McGraw
Faculty of Engineering —
 D. J. McDougall
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HUDSON, D., B.Sc. (Montreal), B.Eng. (McGill), (on leave of absence from the Department of Engineering).

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WEBSTER, Arthur J., B.A. (St. Thomas Seminary, Denver, Colo.) M.A. (St. Thomas, Seminary, Denver Colo) Department of History.

WHITEHALL, E. C., C.A., Lecturer, Department of Accounting.

YALCIN. A. S., B Eng. (Cornell), M.Sc. (Cornell), Ph. D. (Toronto), Associate Professor, on leave of absence, Department of Engineering.

YATES, Miss D., B.A. (Dalhousie), B.Ed. (Acadia). Certificat de Français Littéraire, (Sorbonne), Lecturer. Department of French Studies.

YOUSSEF, Mrs. Z., B.A. (Lycée Français, Cairo). L-ès-L. (Lausanne), Lecturer, Department of French Studies.

ZALOTAY. Rev. J., S.T.D. (University of Vienna). S.S.L. (Pontifical Institute. Rome), Assistant Professor, Department of Theology.

SCIENCE LIBRARY

the faculty committees
for the academic year

The committee on appointments, rank and tenure :

Its function is to recommend policies and procedures for the appointment and promotion of Faculty members.

Members :

Dr. F. G. W. Adams	Secretary
Mr. L. Bessner	
Dr. A. Hooper	
Rev. C. B. O'Keefe, S.J.	
Rev. H. J. MacPhee. S.J.	Chairman

The Committee on academic standing :

Whose duty is to review the policy on academic standing and promotion. to advise the Dean on policy covering appeals from students; to review final examination results.

Members :

Mr. L. Bessner	Secretary
Mr. J. Doyle	
Rev. A. Graham. S.J.	Chairman
Dr. H. Habib	
Dr. F. Hayes	
Dr. T. Janssens	
Associate Dean G. W. Joly	
Mr. J. E. Lempkowski	
Rev. C. B. O'Keefe, S.J.	
Rev. G. Tait, S.J.	

The committee on admissions :

To examine the policy on admissions and to recommend modifications in the regulations, when necessary.

Members :

Dr. R. Becka	
Dr. K. Ekler	
Dr. F. Hayes	Chairman
Mr. D. Hudson	
Associate Dean G. W. Joly	
Mr. A. Lallier	
Mr. R. McGraw	Secretary
Dr. A. Michalski	
Mr. T. Murphy	
Rev. C. B. O'Keefe, S.J.	
Mr. A. Prillo	
Rev. G. Tait, S.J.	
Mrs. K. Waters	

The curriculum committee :

To examine the present program of studies and requirements for degrees; to recommend adjustments in the program, when these are necessary.

Members :

Dr. F. G. W. Adams	
Dr. R. Hinners	
Mr. A. Lallier	
Rev. H. MacPhee, S.J.	
Rev. G. O'Brien, S.J.	
Rev. C. B. O'Keefe. S.J.	Chairman
Mr. R. Wareham	Secretary
Dr. A. S. Yalcin	

The library board :

To formulate Library policies and to advise the Librarian in the carrying out of these policies. The Committee reports to the President and, on occasion, to the Senate.

Members :

Dr. J. Buell	Chairman
Rev. R. Cronin, S.J.	
Mr. K. Krakow	
Mr. A. Lallier	
Dr. D. McElcheran	
Mr. J. Mackriss	Secretary
Rev. G. O'Brien, S.J.	
Rev. C. B. O'Keefe, S.J.	
Dr. E. J. Roesch	
Mr. R. Ruigh	
Mr. G. Trowsdale	

The Committee on research :

To recommend to the President and the Board of Studies a coordinated policy on research. covering all the research activities of the College; to devise procedures covering the submission. consideration and approval of research projects.

Members :

Dr. M. Blanar	
Mr. J. S. Dorrance	
Rev. S. Drummond, S.J.	
Rev. C. Henkey	
Dr. R. Hinners	Chairman
Rev. H. J. MacPhee, S.J.	
Dr. T. Nogrady	Secretary

The scholarship committee :

To examine the policy on scholarships and bursaries. The Committee reports to the President, and, on occasion, to the Senate.

Members :

Mr. P. Lefebvre	Secretary
Dr. D. McDougall	
Dr. D. McElcheran	
Mr. J. D. Morgan	

Rev. J. O'Brien, S.J.
Rev. G. Tait, S.J.
Mr. A. G. Vicas   Chairman
Sub-Committee on Graduate Awards and Programs -
Dr. M. Blanar

Ad hoc committees :

Sub-Committee on the Scheduling of Lectures and Examinations.

Members :

Mrs. E. Cran
Rev. S. Drummond, S.J.
Mr. C. Hewson   Secretary
Mr. R. McGraw
Rev. G. Tait, S.J.

Committee on prospectus :
Members :
Dr. M. Blanar
Mr. J. S. Dorrance   Chairman
Mr. J. Noonan (Registrar's Office).

Committee on visiting lecturers,
special speakers, etc.

Mr. J. S. Dorrance
Dr. K. Ekler
Rev. J. English, S.J.
Dr. H. Habib   Chairman

Sub-committee on college and university television :
Members :

Dr. J. Buell
Mr. J. S. Dorrance
Mr. D. Hudson   Chairman
Rev. J. O'Brien, S.J.
These are small Committees and report to the Dean of Studies and the Senate.

The committee on religious activities :

Its function is to coordinate the religious activities of the College. The Committee reports to the President.

Members :

Mr. Donald Clark
Rev. J. English, S.J.   Chairman

Rev. C. Henkey
Rev. G. McDonough, S.J.
Rev. J. S. O'Neill, S.J.
Rev. G. Tait, S.J.

The committee on student life :

Its function is to act as a co-ordinating body dealing with the non-academic activities of the students. The Committee reports to the President.

Members :

Mr. D. Clark
Mr. D. Hudson
Mr. J. Kennedy
Rev. G. McDonough, S.J.
Mr. J. F. McGovern   Secretary
Rev. C. B. O'Keefe, S.J.   (ex officio)
Rev. J. S. O'Neill, S.J.
Rev. G. Tait, S.J.   Chairman

Sub-committees :
The residence hall committee :
Members :

Mr. D. Clark
Mr. R. T. Coolidge
Mr. C. Hewson
Rev. R. MacDougall, S.J.
Rev. G. McDonough, S.J.   Chairman
Mr. M. Reidy

Discipline - Sub-committee
Members :

Dr. H. Habib
Rev. G. McDonough, S.J.
Dr. D. McDougall
Rev. R. MacDougall, S.J.
Rev. G. O'Brien, S.J.
Mr. M. Reidy

Athletic directorate :

An advisory board on athletic activities.

Members : (Faculty representatives)
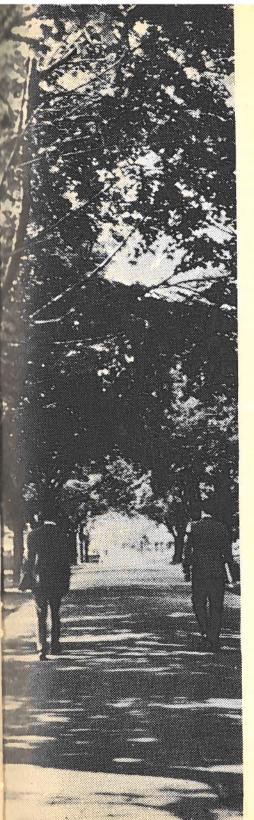
Mr. A. Lallier
Mr. A. Prillo

Other faculty appointments:

Advisor to Women Students—Miss K. Cooper

WUSC	Dr. F. G. W. Adams
CUSO	Dr. C. McGrath
Computer	Mr. D. A. Bonyun
Faculty Councils	Under the Chairmanship of Mr. M. L. Bessner, Director of Commerce Rev. A. Graham, S.J., Assoc. Dean of Sc. Mr. G. W. Joly, Assoc. Dean, Engineering Rev. G. MacGuigan, S.J., Assoc. Dean of Arts.

GEORGE P. VANIER LIBRARY

history of Loyola College

The origins of Loyola College may be traced to the opening of the Collège Ste-Marie in 1848, which resumed in Montreal the work of the historic Jesuit College of Quebec, opened in 1635. From its conception the classical course at the Collège began with both languages, French and English, on an equal footing. From 1888 to 1896 the classical course in English was operated as distinct from that in French, both considered separate units within one institution.

On September 2, 1896, Loyola College was opened at 2084 St. Catherine Street West, but only on February 2, 1899 was *Loyola College* incorporated by an Act of the Quebec Legislature. It had its origin in the separate course, inaugurated ten years earlier, for the English-speaking students at Collège Ste-Marie. On February 5, 1899, Laval University officially extended its Bachelor of Arts degree to Loyola students under the special privileges granted by the Holy See in its Constitution *Jamdudum*, and the first degrees were awarded by Laval in 1903. A similar arrangement was made with the University of Montreal when it was established. In consequence of these arrangements, Loyola was assured of complete autonomy and independence in the shaping of its curriculum and in the conducting of its examinations in Arts courses; degrees being granted by the University of Montreal. Loyola instituted its Faculty of Science in 1943 and

its Faculty of Commerce in 1948. All courses in the three faculties are conducted at the College, and by special arrangement the University of Montreal grants B.Sc. and B.Com degrees to students who have successfully completed their courses in these faculties. The curriculum and examinations of these courses, however, are under the control of the University.

Since the early days of Loyola, many changes have occurred, especially evident in the evolution of curriculum which more and more set the College in the Anglo-Canadian tradition. For instance, the eight-year course was broken up into two distinct four-year units (1919) and options were introduced (1921), confirming three distinct courses, at least in the last two years of college; Arts (General), Arts (Pre-Medical), Arts (Pre-Science).

In 1943 other changes were initiated which transformed Loyola into the developed academic institution it is today. A distinct Faculty of Science was established, offering Honours Chemistry and Honours Physics; the first three years of Engineering were introduced in Civil, Mechanical, Mining, Chemical, and Metallurgical Engineering; major fields in Economics, English and History were establised in 1953 and in Theology in 1962.

Honours Courses in Economics, English and History were initiated in 1958 and in Theology in 1963. An Extension Department, since renamed the Evening Division, and a Summer School were founded in 1957 to fill the need of those unable to pursue their studies during the day and thus provide a public service.

The academic world soon recognized the new status of Loyola : the Chemical Institute of Canada (CIC) approved the Honours Chemistry program as fulfilling all the requirements for professional standing in its Institute; the Engineering Institute of Canada (EIC) recognized the competence of Loyola Engineering Department; the Institute of Chartered Accountants of Quebec accepted the work done in the Commerce course, a major in Accounting, and granted the same privileges to Loyola graduates as were conferred on graduates of other older institutions; the Canadian Conference of Canadian Universities and Colleges accepted Loyola as an autonomous member. All faculties of the College have prepared students for and have sent them to the graduate schools of American, British and Canadian

universities, which have conferred Engineering, Master's and Doctoral degrees on them.

The growth of Loyola has made noticeable changes; for example there are now four faculties and fifteen departments; the number of lay members of the staff has increased very greatly; and, there has been a very ambitious building programme established to provide the necessary physical facilities.

The rising importance of the Extension Department and the Summer School necessitated a revaluation of the programme in the course of which the Extension Department was renamed Evening Division of Loyola College and became more closely integrated with the Day Division of the College. The Summer School has retained its basic structure, but day courses were offered for the first time during the summer of 1964. Further information about the work of these two Divisions may be obtained from the Director of the Evening Division.

aim of Loyola College

The aim and purpose of Loyola College has been stated very well by John Henry Cardinal Newman in a Sermon preached in the University Church at Dublin entitled "Intellect, the Instrument of Religious Training" in which he states :

. . . I wish the intellect to range with the utmost freedom, and religion to enjoy an equal freedom, but what I am stipulating for is, that they should be found in one and the same place, (i.e., religion and science) and exemplified in the same persons . . . wish the same spots and the same individuals to be at once oracles of philosophy and shrines of devotion. It will not satisfy me, what satisfies so many, to have two independent systems, intellectual and religious, going at once, side by side, by a sort of division of labour, and only accidentally brought together. It will not satisfy me, if religion is here and science there, and young men converse with science all day, and lodge with religion in the evening. It is not touching the evil, to which these remarks have been directed, if young men eat, and drink and sleep in one place, and think in another; I want the same roof to contain both the intellectual and moral discipline.

Devotion is not a sort of finish given to the sciences; nor is science a sort of feather in the cap, if I may so express myself, an ornament and set-off to devotion. I want the intellectual layman to be religious, and the devout ecclesiastic to be intellectual ... Sanctity has its influence; intellect has its influence; the influence of sanctity is the greater on the long run; the influence of intellect is greater at the moment. Therefore in the case of the young, whose education lasts a few years, where the intellect is, there is the influence. Their literary, their scientific teachers, really have the forming of them ...
This is Loyola's reason for existence; this is Loyola's aim.

facilities

BUILDINGS   Loyola College is located on a fifty-acre site in the west end of Montreal. The structures of the College are : the Refectory Building (built in 1916); the Administration Building (1927); the Stadium and Cafeteria (1923); the Chapel and Auditorium (1933); the Central Building (1947); the Student Residence (1960); the Drummond Science Building (1962); Hingston Hall (1963); a temporary student union building (remodelled in 1963); and the Georges P. Vanier Library (1964). The new Library Building provides additional study areas and improved library facilities; and the new Student Residence accommodates 300 students. In the near future, the recently remodelled Junior Building will become available for lecture rooms and offices.
LECTURE ROOMS   The 25 lecture rooms have a total seating capacity of 1,600. The amphitheatre in the Drummond Science Building can seat 350 students; the auditorium has a seating capacity of 750.
LIBRARY   The combined new library buildings permit book holdings up to 170,000 volumes and study space for 520 students at a time.
LABORATORIES   About 60,000 square feet of floor space is devoted to science laboratories, shops, and offices. In addition, there are five engineering laboratories, a fully-equipped language laboratory, and a computer room housing an IBM 1620 Data Processing System and associated equipment.
MAIN CHAPEL   The College Chapel has a seating capacity of about 500.
RESIDENCE   The new residence, Hingston Hall provides accommodation for 300 students.
STADIUM   The stadium has a regulation-size artificial ice surface.

income and needs of the college

The endowment of Loyola College in buildings and educational equipment is in excess of ten million dollars. The Development Plan of Loyola College calls for a Student Union, an Engineering Building, a Faculty Residence, and an Athletic Centre. The present High School Building will be replaced by a building on another site.

THE CAPITAL DEVELOPMENT PROGRAMME   Continual building needs call for continuing capital development support from individuals, business and industry throughout Canada. Current construction plans include added classroom and laboratory space, residence facilities, engineering building, athletic centre and Student Union.

THE FACULTY ENDOWMENT FUND   The need to keep pace with the growing demands for increased faculty membership of the highest qualification can be met only if an endowment fund of substantial size is available to supplement current revenue and grant funds.

THE VANIER LIBRARY ENDOWMENT FUND   Contributions provide for the growth of Library holdings and facilities at Loyola commensurate with student study and research needs.

SCHOLARSHIP AND BURSARY ENDOWMENT   Loyola receives continuous requests from talented and worthy students for financial aid. Both Annual and Funded scholarships and bursaries are sought to meet this need.

THE INSURANCE ENDOWMENT FUND   A relatively small Life Insurance premium payment each year out of current Income can provide a gift to Loyola of substantial size. The death of the donor will not interrupt the completion of the gift, nor will the estate of the donor be diminished for the rest of the family.

THE ALUMNI ANNUAL FUND   Annual giving by Alumni represents the largest single source of support to Universities and Colleges in North America. A regular yearly contribution to the Loyola Alumni Association supports a variety of aid programmes to Loyola College and her students. For full information and additional printed material please contact the Development Office.

services to students - religious activities

In order to make concrete and personal the religious truths, which the students have studied in the Theology courses, Loyola College offers a program of religious activities calculated to nourish and deepen their personal and apostolic dedication.

DAILY MASS   A special Student's Mass is offered daily, Monday to Friday, at 1.00 p.m. in the College Chapel. Two confessors are always available during the Mass.

SODALITY OF OUR LADY   This organization was established by the Society of Jesus four centuries ago and commissioned by Pope Pius XII in 1948 to meet the needs of the Church by forming competent and dedicated lay leaders. The members undertake an intensive spiritual formation, and dedicate themselves to assist the spiritual, intellectual and social progress of the College, and to promote work in the hospitals and among the poor and underprivileged of the City.

APOSTLESHIP OF PRAYER   The Apostleship is an association with a two-fold aim : first, to instill into the students that apostolic spirit which, as public men, it is hoped they will later on exercise in the world, and secondly, to join in the great crusade of prayer for Christian unity.

ST. JOHN BERCHMANS SOCIETY   This Society has as its aim the training and supplying of servers for the Masses and other liturgical functions which take place at the College. The Society is open to all students, resident and non-resident.

COLLEGE MISSION   On Wednesday, October 6, a three day mission for College students will begin. Each session will take place at noon and consist of a talk by a guest speaker, the Holy Sacrifice of the Mass and opportunity for receiving the Sacrament of Penance. The purpose of this mission is to stimulate a renewal of Christian living by re-examining basic Christian values.

WEEKEND RETREATS   Each year students are invited to make a closed retreat. A special retreat is offered to the Senior students while the other retreats are open to all interested students. A nominal fee is charged for room and board at the Retreat House. Dates and location of retreats will be announced.

John XXIII Diocesan Student Center

Sponsored by the Archdiocese of Montreal as an information Center on the various Apostolic Works and projects available to Young People. Also counselling and guidance with reference to Religious Vocations to the Priesthood. Visitors welcome to Lounge, Reading Room, and daily Mass in the house Chapel.

Address : 3500 Belmore Ave.,
Phone : 489-6285
Director : Rev. D. McCormack.

Academic counselling

All aspects of Freshman orientation and Academic Counselling are under the direction of the Director of Freshman. The upper classman's academic work will be directed by the Head of the Department of Faculty in which he is registered.
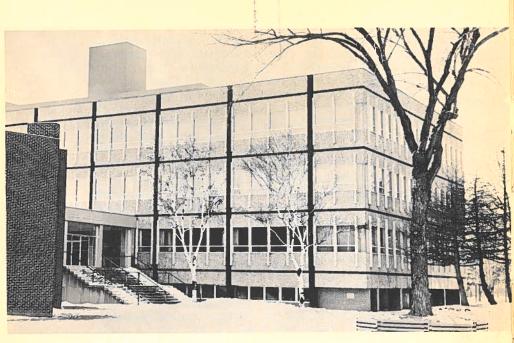
To facilitate counselling and to provide the freshman students with a counsellor from the faculty, a committee of Faculty Advisers operates under the Director. Each Faculty member has from eight to ten students with whom he may become more closely associated than is possible in the lecture room, and whose academic work he reviews periodically with the student.

Student activities

Students societies, committees and clubs, which number approximately sixty-five, combine to develop in the student body a sense of responsibility, a capacity for mature dialogue and government and a love for the school. These activities embrace all aspects of education : religious, political, managerial, social, recreational, athletic and cultural. All societies are initiated, developed and financed by the students themselves, through the medium of the Student Association and its governing body, the Student Administrative Council.

ELIGIBILITY   Although all full-time students of Loyola College who have paid their student activity fee for the academic year are members of the Student Association, they are subject to the following eligibility rules in order that they may take part in society and committee activities : 1) they must have shown satisfactory conduct and application and must remain in good academic standing; 2) they must not be under censure at the time of their election or appointment.

SCIENCE BUILDING

Determination of standing

Term work

In all subjects, the ratio of term-work to examination mark is determined by the Department concerned. In general, the final examination will not count for less than 50%.

An instructor, with the approval of the Dean and the Chairman of the Department concerned, may require that essays, term papers, etc., be completed satisfactorily and in due time before a student will be granted permission to write the final examination. If the conditions are not filled, the student will be debarred from writing the final examination.

Requirements for promotion

a) A student is eligible for promotion if :
   i) he has obtained the required pass average; and if
   ii) he has not failed in more than two full courses.
b) If a student has failed to obtain the required pass average he may be permitted to repeat.
c) If a student has obtained the pass average but has failed in more than two courses, he may be permitted to repeat.

d) A student who has failed a course, or courses (with a minimum of 35%) but who is not obliged to repeat the year's work must write supplemental examinations.

e) Normally a student will be allowed to carry only one condition (a full course failed) into the following year. The Committee on Academic Standing may make exceptions.

f) A student must obtain complete standing in his First Year before he may register for the Third Year; and in his Second Year, before he may register for the Fourth Year.

g) Normally a student must have completed standing in Third Year before he may register for Fourth Year. The Committee on Academic Standing may make exceptions.

Transfer students

The promotion of students who transfer to another Faculty or programme of studies will be decided upon by the Dean and the Chairman of the Department to which he is transferring.

Failures, repetition and withdrawals

Failures

A student fails his year if he has not obtained a passing average; or if, with a passing average, he has failed more than two full courses.

Subjects which depend directly upon the work of a preceding year may not be taken by a student who has failed in the work of the preceding year. A student who fails to pass a supplemental examination will not be eligible for re-examination without a further year's attendance in the course in which he has failed.

Repetition

A repeating student is one who has failed the previous year here or at any other recognized university, regardless of whether he is registered in the same or a different faculty.

Students may be permitted to repeat a year, subject to the approval of the Committee on Admissions. Students seeking this permission must apply in writing to the Registrar's Office before July 15th.

A student may repeat a course only once, except with permission of the Committee on Academic Standing. However, he may be granted credit on a course in which he has obtained 65% or more. He may not take courses which are scheduled in advance of the year he is repeating.

Repeating students in the First Year who do unsatisfactory work on the Christmas examinations shall be required to withdraw, subject to an appeal to the Committee on Academic Standing, which appeal should be submitted in writing and sent to the Office of the Dean of Studies within one week after the publication of the results. Unsatisfactory work is defined as having an average below 50%.

Withdrawals

a) A student who is repeating a year and fails to obtain a pass average in the final examination must withdraw.

b) A student who is repeating First Year and fails to obtain 50% in the Christmas tests must withdraw.

c) A student who is on probation and fails to obtain a pass average in the final examinations must withdraw.

d) A full-time student who fails his year and who has already failed twice (either here or elsewhere) must withdraw.

e) A student who in his First Year fails to reach a minimum standard in the Christmas tests must withdraw. The minimum standard is defined as an average of 30%.

Rereading

While all papers in failed subjects are reread before the grades are submitted to the Registrar's Office, and care is taken to record marks accurately, a student who considers that some factor affecting the final mark on the examination was not considered by the examiner, may appeal to have the paper reviewed. This request should be submitted in writing to the Registrar within two weeks of the official publication of student grades, together with a fee of $10.00.

Reports

Reports of final examination results of all students are sent to their homes. A mid-year report is also sent to the homes of First Year students.

scholarships, bursaries and awards

Scholarships

A Scholarship is an award granted annually to a student for academic excellence, and which may be renewed if the student maintains an above-average (70% overall average) academic standing. The fact that the student has been awarded a scholarship will be duly confirmed by a parchment stating these facts.

The students will not receive cash unless otherwise stated, but their tuition fees will be fully or partly paid by the scholarships and only the remainder by the students themselves, depending on the value of the scholarships awarded.

The value of Endowed Scholarships may fluctuate depending on the current interest rates. The figures given are based on a five per cent (5%) interest rate.

SCIENCE LIBRARY, INTERIOR

Apart from Entrance Scholarships, candidates for scholarships must have completed at least one year at Loyola College.

No student will be considered eligible for a scholarship who has failed any year in his college or university education. Consideration will, however, be given to the student who has obtained more than a 70% average in each of the two years following the year repeated. *e.g.*, a student who fails in Freshman may be eligible only in his Senior year; a student who fails in Sophomore, Junior, or Senior will not be eligible.

No student with supplemental examinations will be eligible for a scholarship, or if he already holds a scholarship, for its renewal.

For renewal of a scholarship, the student holding the scholarship must obtain an overall average of 70% or more for the current academic year, and must have passed all his final examinations in the courses in which he is registered.

If a student holding a scholarship decides to change faculty he will retain the scholarship only on condition that he receives the approval of the Scholarship Committee.

No student may hold more than one scholarship from the College at any one time.
By Closed scholarship is meant that the scholarship is at present held by a student and is renewable.

By Open scholarship is meant that the scholarship is available to the student who has obtained the highest academic standard in the Year and Faculty specified below, and who does not already hold another scholarship. In case of ineligibility the student with the next highest standing is eligible.

A. endowed scholarships

The Lilly F. Barry Scholarship
1 Value : $510 Open. — 2 Value : $510 Closed. — 3 Value : $490 Open.

The Ursula Carling Scholarships These are an endowment from the estate of the late Mrs. Ursula Carling.
2 Value : $250 Each Open

The Cloran Memorial Scholarship — Value : $80 Open

The Collins-Heffernan Scholarship. Funds from the Mary Ellen Heffernan Bursary and from the Nelson Collins Scholarship
Value : $200 Open
Conditions : Open to students entering Fourth Arts

The Cuddy-Stanford Memorial Scholarship Funds from the John M. Cuddy Scholarship and from the Stanford Memorial Scholarship.
Value : $200 Open.
Conditions : Open to students entering Third Commerce.

The Dowling-Moriarty Scholarship. Funds from the estate of the late Francis J. Dowling, and of the late Mrs. E. Stowell, widow of John Moriarty.
Value : $200 Closed
Conditions : Open to students entering Fourth Engineering

The Mrs. F. J. Duckett Scholarship. From the estate of the late Mrs. F. J. Duckett. — Value : $200 Open

The Friends of Loyola Scholarship. From the funds endowed for the James Corcoran Scholarship, the Rev. William Doherty Scholarship, the Dollard Scholarship, and the Gregory O'Bryan Scholarship, and from funds given by the Student's Penny Scholarship. — Value : $200 Closed.

The Arthur Halley Memorial Scholarship. Endowment from P. F. Halley of St. John's Newfoundland, in memory of his son, Arthur, a graduate of the Pre-Medical class of 1946, magna cum laude, who died on the eve of Convocation.
Value : $100 Closed
Conditions : Open to students entering Fourth Arts (Bio-Chem.) or Fourth Science (Bio-Chem).

The Loyola Sodality Scholarship. Funds from the Sodality Scholarship and from the Loyola Scholarship Club Association Bursary.
Value : $200 Open.

The Mahoney-Murphy Memorial Scholarship. Originally established as the Mother-Ellen Memorial Scholarship, and as the John Walsh Murphy Memorial Scholarship — Value : $200 Open.

The Kenneth J. McArdle Memorial Scholarship. Donated by Mrs. Mary McArdle as a tribute to the memory of her late husband Kenneth J. McArdle.
Value : $125 Closed

Conditions : Open to students entering Second Science (Honours Mathematics or Major Mathematics).
The St. Ignatius Parish Scholarship. Money collected and presented by the St. Ignatius Men's Association and originally known as the Coronation Arts Course Scholarship.
Value : $100 Closed.

The Sharp-O'Reilly Memorial Scholarship. Funds from the Alice M. Sharp scholarship, and from the Winnifred O'Reilly Memorial Bursary.
Value : $200 Closed.

B. gifts by the college

Loyola College Scholarships.

Entrance scholarships are awarded by the Scholarship Committee to students entering Loyola College from Grades XI and XII, a few are reserved for upper year students. These scholarships cover full tuition fees, and are automatically renewable from year to year until the student obtains his degree as long as the student performs satisfactorily. A student's performance is judged satisfactory if a student passes every course without supplemental exams, and obtains an overall average of at least 70% in each year at Loyola College.
These scholarships will be awarded on the basis of the principal's recommendations, the candidate's high School record and the results of the student's final year exams in high school.

Second Year

Arts. Number : 8, Value : $490 Closed
Commerce. Number : 4, Value $490 Closed
Science. Number : 10, Value $510 Closed
Engineering. Number : 7, Value $530 Closed.

Third Year

Arts. Number : 15, Value $490 Closed
Commerce. Number : 3, Value $490 Closed
Science. Number : 9, Value $510 Closed.
Engineering. Number : 7, Value $530 Closed.

Fourth Year

Arts. Number 2, Value $490. One Open, One Closed.
Commerce. Number 2, Value $490. Closed
Science. Number 2, Value $510. Closed.
The Bartlett Memorial Scholarship   Value : $80 Closed.

The Bartlett-Doherty Memorial Scholarship Value : $80 Open to Students entering Third Science.
The Gasson Memorial Scholarship Value : $200 Open. Conditions : Open to students entering Third Commerce.
The Jones Memorial Scholarship   Value : $200 Open.
The McCarthy Memorial Scholarship
Value : $200 Open.
The McMahon Memorial Scholarship
Value : $160 Closed.
The O'Bryan Memorial Scholarship
Value : $200 Open.
The O'Dowd Memorial Scholarship
Value : $200 Open.
The Rector's Scholarship   Number : four.
Value : one at $160; three at $150. All Open.

C. annual gift scholarships
The Charles Brown Memorial Scholarship
Value : $50 Closed.
The Mrs. Charles Brown Scholarships
Number : Two. Value : $100.
One Closed; One Open. Conditions : Open to students entering Third Commerce.
The Gutelius Memorial Scholarship Value : $100 Open. Conditions : Open to students entering Fourth Commerce.
The Knights of Columbus Council 284 Scholarship Value : $150. Open.
The State Council, Knights of Columbus, Province of Quebec Scholarship. Value : $100 Open.

Bursaries
A Bursary is a sum of money given to a student in order to assist him financially in the continuation of his studies.
A Bursary will take the form of a credit made to the student's tuition account. Ordinarily bursaries will not be awarded to students with less than a 50% overall average.
Students desiring bursaries must make written application to : The Chairman, Scholarship Committee, Loyola College, Montreal 28.
Applications for bursaries must be made :
a) no later than September 1 for bursaries covering either full tuition or part tuition; applications received after the closing date will be retained and considered only after the second closing date and only for part of tuition;

b) no later than December 20 for bursaries covering part of the student's tuition. Applications received after this second closing date will not be considered and will be returned to the applicants. Freshmen may apply for a second semester bursary.

Students are permitted to make only one application in any given academic year.

Province of Quebec

The Province of Quebec has an extensive programme of Bursary-Loan assistance available to students who have been domiciled and resident in the Province of Quebec for at least the last two years before being admitted for the first time to the institution they are attending. For application forms the student must write direct to :

The Ministry of Education,
Parliament Buildings,
Quebec City, P.Q.

and ask for an official application form. The student then fills in the form, has it signed by his parents, and has it stamped and verified at the Student Aid Office, and then sends it back to Quebec so that it arrives there before 30th September. On no account are completed applications considered after 30th September.

Federal Loan Plan

Students residing outside the Province of Quebec, but studying in an Institution in the Province of Quebec may apply for a loan under this plan. Contact the bank manager in your home town for information and details.

The IBM THOMAS J. WATSON MEMORIAL BURSARIES Donated by the International Business Machines Company Limited as part of the IBM Thomas J. Watson Memorial Bursary Program. Number : Two. Value : $500 each. Conditions : Awarded annually to needy undergraduates in any year and faculty who are of good academic standing. Please apply at the Student Aid Office. Closing date is September 1st.

The LOYOLA ALUMNI ASSOCIATION UNDER-GRADUATE BURSARIES Number : Four. Value $100. Conditions : Awarded annually to talented and deserving students who have completed as least one year at Loyola College. Apply at the Student Aid Office by 20th December.

The LOYOLA ALUMNI ASSOCIATION POST-GRADUATION BURSARIES Number : Four. Value : $100. Conditions : Awarded annually to talented and deserving students of the current graduating class who have been accepted for post graduate work at a recognized university. Apply at Alumni Office.

The LOYOLA AFRICAN BURSARIES (A) Number : Four. Value : varies (includes full tuition, registration fee, room and board). Conditions : Awarded to qualified and deserving students from any country in Africa who intend to aid their homeland's development.

(B) Number : Six Value : varies (includes full tuition and registration fee). Conditions : Same as for Type (A).

The LOYOLA BURSARY FOR THE BLIND.
Number : One. Value : full tuition for one year; renewable. Conditions : To a blind student who is qualified to follow regular courses.

The ST. PATRICK'S SOCIETY BURSARY Number : One. Value $200. Conditions : Awarded annually by the St. Patrick's Society of Montreal preferably to a Fourth Year Student in any faculty who is Irish or of Irish extraction. Application forms may be obtained at the Student Aid Office. Closing date is December 20th.

The TOUCHE, ROSS, BAILEY AND SMART BURSARY Number : One Value : $200. Conditions : "The Bursary . . . will be awarded annually to a student who is completing his third year and will be entering his final year, majoring in Accountancy in the Faculty of Commerce, and who intends on graduation to pursue the qualification of Chartered Accountant. The award will be made on the basis of academic record, ability, personality and other suitable characteristics . . . "

The BIRKS FAMILY FOUNDATION BURSARIES A limited number of bursaries are available under this plan. The student's financial need and academic standing will be considered in the granting of these bursaries. Apply to the Student Aid Office.

SOCIETE ST-JEAN BAPTISTE - Le Prêt d'Honneur. Le Prêt d'Honneur offers a loan plan to students during 12 months of the year. Requests for applications must be made directly to the Société St. Jean Baptiste, 1182, boulevard St. Laurent, Montreal.

NATIONAL COUNCIL OF JEWISH WOMEN OF CANADA, MONTREAL SECTION BURSARIES.

A limited number of bursaries are awarded by the Council upon the recommendation of the Student Aid Office. Academic standing and financial need are considered on making the award. Although there is no legal obligation, the Council hopes that the holders will, if possible, return the money at some future time so that other students may be helped by the College. Apply to the Student Aid Office.

The LOYOLA ALUMNI STUDENT LOAN FUND. The Loan Fund exists to aid students who are in financial difficulties. Because of limited resources, the trustees of the Fund normally will consider loans to students who : 1) have been successful in their last set of final examinations at Loyola; 2) are receiving a bursary from the Province of Quebec; and 3) are prepared to repay the loan by the end of the next summer.

Applications should be made in writing to : Loyola Alumni Student Loan Fund, Loyola College, 7141 Sherbrooke Street West, Montreal 28.

Commonwealth Scholarships

Under a Plan drawn up at a conference held in Oxford in 1959, each participating country of the Commonwealth offers a number of scholarships to students of other Commonwealth countries. These scholarships are mainly for graduate study and are tenable in the country making the offer. Awards are normally for two years and cover travelling, tuition fees, other university fees, and a living allowance. For details of the awards offered by the various countries consult the Registrar's office or write to The Canadian Universities Foundation, 77 Metcalfe Street, Ottawa, Ontario.

CHILDREN OF WAR DEAD (EDUCATION ASSISTANCE) ACT. — Passed on July 1st, 1953, this Act provides assistance towards an education beyond secondary school level for sons and daughters of veterans whose death resulted from military service during World War I, World War II, or the Korean War. If the application is approved, the Department of Veterans Affairs will pay : a) to each student an allowance of $25 per month for the period during which he or she is attending a full-time course, up to a maximum of 36 months; b) to the University, tuition fees and other costs as described in the Act, up to a maximum of $500 per academic year. Apply to the Department of Veterans Affairs.

Awards

GOVERNOR-GENERAL'S MEDAL. Presented by His Excellency the Governor General of Canada to the student with the highest overall average in the four years of Arts.

LIEUTENANT-GOVERNOR'S SILVER MEDAL. Presented by His Honour the Lieutenant-Governor of the Province of Quebec to the student with the highest overall average in the four years of Science.

LIEUTENANT-GOVERNOR'S BRONZE MEDAL. Presented by His Honour the Lieutenant-Governor of the Province of Quebec to the Student with the highest overall average in the four years of Commerce.

LOYOLA GOVERNOR'S MEDAL. Presented by the Loyola Board of Governors to the student with the highest overall average in the four years of Engineering.

THE LOYOLA MEDAL. Presented by the Loyola College C.O.T.C. to the most representative Loyola student among the graduates.

THE PHILOSOPHY GOLD MEDAL AWARD. Presented by Loyola College to the outstanding student in Philosophy among the graduates, and awarded upon the recommendations of the Philosophy professors.

THE HAMILTON WATCH AWARD. Presented by the Hamilton Watch Company to the student who has most successfully combined proficiency in Accounting with achievement, either academic, extracurricular, or a combination of both, in the social sciences or humanities.

THE HAMILTON WATCH AWARD. Presented by the Hamilton Watch Company to the student who has most successfully combined proficiency in Mathematics with achievement, either academic, extracurricular, or a combination of both, in the social sciencs or humanities.

THE SOCIETY OF CHEMICAL INDUSTRY, CANADIAN SECTION, MERIT AWARD. Presented by the Society of Chemical Industry to the Highest-ranking (minimum 75%) student in the fourth year, majoring in Chemistry, Chemistry-Physics, or Chemistry-Mathematics, and who has completed the course in the normal number of years.

Prizes

THE WILLIAM H. ATHERTON PRIZE. Donated by the late Dr. William H. Atherton, and to be awarded to the student outstanding for research in Canadian History.

THE ISAIAH S. BENJAMIN PRIZE FOR MATHEMATICS. Donated by Dr. Isaiah S. Benjamin of Montreal to the Third Year student with the highest three-year average in Mathematics subjects.

The CAE Prize for Engineering : donated by Canadian Aviation Electronics Limited to a graduating student with the highest four-year average in the Engineering subjects.

THE CHEMCELL (1963) LIMITED PRIZE FOR CHEMISTRY. Donated by Chemcell (1963) Limited and awarded to the graduating student with the highest four-year average in Chemistry subjects.

THE CHEMCELL (1963) LIMITED PRIZE FOR ENGLISH. Donated by Chemcell (1963) Limited and awarded to the graduating student in the Arts programme, taking a Major or an Honours in English, with the highest four-year average in English subjects.

THE ECONOMICS PRIZE. Granted by the College to the graduating student in Arts or Commerce, taking a Major or an Honours in Economics, with the Highest four-year average in Economics subjects.

THE GERMAN LANGUAGE PRIZE. Donated by the Consulate General of the Federal Republic of Germany to the student who has shown the greatest progress in the German Language course offered at Loyola College.

THE KNIGHTS OF COLUMBUS PRIZE FOR CANADIAN HISTORY. Donated by the Knights of Columbus of the Province of Quebec and awarded to the student who has obtained the highest mark in Canadian History during the current academic year.

THE R. E. O'CONNOR PRIZE FOR MATHEMATICS. Donated by Dr. Isaiah S. Benjamin of Montreal to the student graduating in Science or Engineering with the highest four-year average in Mathematics subjects.

THE PHYSICS PRIZE. Granted by the College to the graduating student in Physics with the highest four-year average in Physics subjects.

THE DR. JACQUES SMITH MEMORIAL PRIZE. Donated by Dr. Kurt Ekler in memory of Dr. Jacques Smith, chief of surgery at the Hotel Dieu Hospital (St. Jerôme) and a graduate of Loyola, who died suddenly in 1960 at the age of thirty six. Awarded to the graduating student with the highest four-year aggregate standing in the Biology-Chemistry course (Science or Arts).

THE MRS. ALFRED THIBAUDEAU PRIZE FOR POLITICAL SCIENCE. Donated by Miss Madeleine Thibaudeau in memory of her mother, Madame Alfred Thibaudeau, and to be awarded to the graduating student with the second highest average in the field of Political Science.

THE MRS. RENEE VAUTELET PRIZE FOR POLITICAL SCIENCE. Donated by Mrs. Renée Vautelet and to be awarded to the graduating student with the highest average in the field of Political Science.

LOYOLA BAND PRACTICE

courses

The faculty of arts

Students admitted to Arts follow General and Honours programmes of twenty-two courses for four years.

A General Arts student will choose a field of concentration ("major") from : Biology-Chemistry (which meets pre-medical requirements), Classics, Communications, Economics, English, French, History, Philosophy, Political Science, Spanish, Theology. The field of concentration is normally chosen at the end of first year.

An Honours student, one who welcomes the opportunity for deeper and more intensive study, with an eye, perhaps, to post-graduate studies, will choose (subject to departmental approval) from : Economics, English, History, Theology. He must have better than 70% matriculation average, and 65% yearly average (with not less than 65% in any course) to maintain honours standing.

A chosen field of concentration or honours programme may dictate the electives to be taken in first year. Students should consult with the department of their choice during the period of academic counselling preceding registration.

Faculty of commerce

The inauguration of the Faculty of Commerce at Loyola in 1948 marked a significant modernization of the traditional philosophy of education. Areas of concentration in Business and Accounting were set up to meet the demands for orientation in the field of Commerce. Loyola has, at present, an Honours course in Economics and majors in Accounting and Economics and intends to offer a major in Business in the near future. The Honours programme is designed for students who want a deeper and more extensive knowledge in their field of concentration and who wish to pursue post-graduate studies. The Faculty has retained all the necessary disciplines essential to a broad education. This would include courses in English, Philosophy and Theology. The general requirements for admission and the standards are similar to those in the other faculties (see page 49). At the end of the first year the student decides the area in which he will concentrate. Students who choose to follow a major must maintain a yearly average of 60%; those in the Honours programme

must maintain a yearly average of 65%, and not less than 65% in any course in their field of concentration. All candidates must have a minimum of twenty-two recognized academic credits to receive the decree. All inquiries should be made in writing to the Director of Commerce.

Faculty of Science

The General Science programme leading to a Bachelor of Science is four years of study in a field of concentration (Major) in one of Biology-Chemistry Mathematics; Physics. Applicants to this program must show better than average marks in science and mathematics.

The Honours Science programme may be followed in Chemistry, Mathematics or Physics. The Honours Chemistry fulfils the requirements for professional membership in the Chemical Institute of Canada. Applicants for the Honours programme must have at least a 70% average in their final high school examinations. Those who enter Honours programmes must have successfully passed courses in Intermediate Algebra and Trigonometry. Throughout the Honours programme students must maintain a yearly average of 65% and obtain not less than 65% in any course of their field of concentration. Freshmen who wish to follow an Honours programme should consult with the Departments concerned at the sessions of academic counselling which precede Registration.

Faculty of Engineering

The Faculty of Engineering offers a 5-year programme which, on the technical side, is designed to meet the standards of the Provincial Engineering Corporation and Associations of Canada, and on the humanistic side, is designed to embody the Liberal Arts traditions that have been part of Loyola's Engineering since 1945.

Normally, applicants are admitted who have achieved Junior Matriculation at the standard set forth in the engineering section of the Calendar. However, Senior Matriculants also are accepted and are registered in the Second Year of the programme, if they have completed courses equivalents to those of the First Year of Engineering.

Enquires are invited from applicants wishing to submit programmes which they consider the equivalent of those described in the engineering section of the Calendar.

Geotechnical Science offers a programme of basic sciences, geology and allied fields including some appropriate engineering subjects. Honours Geotechnical Science are not offered but the Major programme is of sufficient calibre that graduates with a Second Class standing are prepared for admission to graduate studies at many North American universities.

LIBRARY, INTERIOR

accounting

L. M. Bessner Associate Professor (Chairman)
R. L. McGraw   Assistant Professor
G. M. Bonder   Lecturer
D. F. MacDonald   Lecturer
E. C. Whitehall   Lecturer

101   Elements of Accounting. Full Course.   R. L. McGraw
D. F. MacDonald

A general introduction to Accounting. The preparation and use of work sheets and financial statements including an examination of the books, ledgers and other data used in the preparation of these statements. In addition the legal and accounting aspects of various forms of business organizations, sole proprietorships, partnerships, and limited companies are discussed.
Lectures : 3 hours per week for two terms.
Text : *Accounting*, Meigs & Johnson, Can. ed., McGraw-Hill. Smails, *Accounting Principles*, Ryerson.

202   Intermediate Accounting. Full Course.   G. Bonder
Operating Statements and Balance Sheets with enlargement of Work Sheet Practice introduced in First Year.
Partnerships : formation; the partnership agreement; classes of partners and of partnerships; rights, duties, and powers of partners; distribution of profits; admission and withdrawal of partners; partnership dissolution; sale of a partnership to a corporation; default of a partner, goodwill.
Corporations — Legal Aspects : formation and control; shareholders, directors; meetings; public and private companies; capital stock; limited liability; statutory books; auditors; dissolution; accounting for corporation taking over sole proprietor or partnership; exchange of shares in corporation for assets in business selling out.
Manufacturing Accounts and Statements : factory departments; elements of cost; materials and supplies; work in process and finished goods accounts; periodic and perpetual inventories.
Departmental Accounts : distribution of charges to departments; comparison of department operations.
Depreciation : causes of and accounting for depreciation.
Reserves and reserve funds.
Principles of valuation of current and fixed assets and liabilities; inventories; theory of valuation.
Single entry conversion to double entry.
Bonds and Debentures : security payment of interest and principal; trust deed; issue and redemption; accounting for bond issue, interest and amortization.
Lectures : 3 hours per week for two terms.
Texts : Smails, *Accounting Principles*. Ryerson, Finney and Miller, *Principles of Accounting — Intermediate*. Can. 5th ed., Prentice-Hall.

204   Intermediate Accounting. Full Course. D. F. MacDonald
A continuation of the study and preparation of financial statements including basis of balance sheet valuations and classifications. Effects of price — level changes on financial statements.
Corporations — Legal and accounting aspects of the components of shareholders' equity : share capital, contributed surplus, capital surplus, appraisal increments, retained earnings.
Intangible Assets : Legal and accounting aspects of patents, copyrights, franchises, leaseholds, trademarks, goodwill. Computation of goodwill in connection with the purchase of a going concern.

Analysis and Interpretation of Financial Statements : Percentage and ratio analysis, analysis of working capital, analysis of operations, profitability and efficiency ratios, current asset turnovers and conversion periods. Computation and significance of book value and earnings per share. Preparation and use of statement of source and application of funds and cashflow statement.
Text : Finney & Miller, *Principles of Accounting — Intermediate*. Can. 5th ed., Prentice-Hall.

303 Accounting and Auditing. Full Course.   R. L. McGraw

Analysis and interpretation of financial statements; statements of source and application of funds; comparative ratios and share evaluation.
Introduction to auditing; classification and scope of audits; internal control; legal and moral responsibilities of auditors with reference to court decisions; fraud and error in accounts; requirements of Federal and Provincial Companies Acts; audit certificates and reports; programmes and working papers.
Lectures : 3 hours per week for two terms.
Texts: Finney and Miller, *Principles of Accounting — Intermediate*. Can. 5th ed., Prentice-Hall. Stettler, *Auditing Principles*. Prentice-Hall. Smails, *Auditing*. Ryerson. *Quebec Companies Act*. Queen's Printer. *Companies Act. 1952*. Queen's Printer *Bulletins of Canadian Institute of Chartered Accountants*.

306 Accounting and Auditing — Advanced. Full Course.
E. G. Whitehall

Joint ventures; installment sales; holding companies; consolidations; mergers; amalgamations; re-organization and reconstruction; branch accounts and consignments including foreign entities.
Investigations : nature and classes of business investigations; requirements for prospectus; sale of business by proprietors, partnerships and corporations with valuation of goodwill.
Lectures : 3 hours per week for two terms.
Texts : Karrenbrock and Simons, *Advanced Accounting*. 3rd ed., Southwestern. Smails, *Accounting Principles*. Ryerson.

310 Accounting. Full Course.

A course offered by the Accounting Department to students in the Faculties of Arts, Science and Engineering :
Includes explanation and use of Accounting; major forms of Business entities; analysis and interpretation of Financial Statements; control of business operations, budgeting and profit planning; function and use of Cost Accounting; Income Tax Theory; use of Machine Accounting; Commercial and Life Insurance; Estate Planning, including Gift Tax, Federal Estate Tax and Provincial Succession Duties.
PURPOSE : — to give non-business students an understanding and appreciation of general language of Accounting.
No prerequisite in Accounting is required.

405 Cost Accounting, Estate Tax, Bankruptcy and Income Tax. Full Course.   L. M. Bessner

Cost Accounting : terms and cost formulae; elements of cost; cost reports; estimating cost systems; standard costs; job costs; variances; cost ratios; differential and direct costing.
Budgetary Control : preparation and control of the budget, variable expense budgets.
Executorships : charge and discharge statements; capital and

income; division of an estate; estate tax and succession duties.
Bankruptcy and Liquidation Accounts : receivers' accounts; priority of creditors; statement of affairs; deficiency account; realization and liquidation statement.
Income Tax : individuals; proprietors; partners; corporations; general considerations.
Lectures : 3 hours per week for two terms.
Texts : Matz, Curry and Frank, *Cost Accounting*. 3rd ed., Gage. Karrenbrock and Simons, *Advanced Accounting*, 3rd ed., Southwestern. Gilmour, *Income Tax Handbook, 1964-65. Estate Tax Act*. Queen's Printer. *Canadian Bankruptcy Act*. Queen's Printer.

406 Advanced Auditing and Specialization. Full Course.
L. M. Bessner

A continuation of Accounting and Auditing : commercial and life insurance including pension plans; machine accounting; investigations for frauds, etc.; report writing in detail; Fund Accounting, including hospitals, municipalities, universities and non-profit organizations; rules of professional conduct; management advisory services.
Lectures : 3 hours per week for two terms.
Texts : Karrenbrock and Simons, *Advanced Accounting*. 3rd ed., Southwestern. Finney and Miller, *Principles of Accounting Advanced*. Can. 5th ed. Prentice-Hall. Stettler, *Auditing Principles* 2nd ed., Prentice Hall.
Students holding the Bachelor of Commerce degree with a Major in Accounting from Loyola College are usually exempted on recommendation from the Intermediate examinations of the Institute of Chartered Accountants of Quebec. They are also usually exempted from three of the five years of apprenticeship required for the C.A. certificate.
All other graduates of the College who wish to enter the profession of Accounting, but who have not followed the curriculum (as described above) for an Accounting Major, may do so by successfully completing a prescribed course of training which normally consists of three years of Evening Courses in Accounting, with at least two years of service in an approved office. For additional information, please consult the Chairman of the Accounting Department.
Additional optional courses may be taken with permission of the Chairman of the Accounting Department.

The honours and major programmes offered in the Faculty of Commerce in the 1965-66 session will be as follows :

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
ACCOUNTING 101	ACCOUNTING 202	ACCOUNTING 303	ACCOUNTING 405
English 101	Business 204	ACCOUNTING 406	ACCOUNTING 306
French	French	Philosophy	English
Maths 101	Philosophy	Theology	Philosophy
Theology	Business 201	ELECTIVE*	or Theology
ACCOUNTING 102	Maths 203-202		ELECTIVE

*Electives may be taken from Business, Economics, Mathematics, Political Science.

biology

Rev. S. Drummond, S.J. Professor (Chairman)
Rev. R. T. Cronin, S.J. Assistant Professor

101 Fundamental Biology. Full Course.

A series of lectures and demonstrations designed to acquaint the general student with those fundamental principles of life which are the basis for an understanding of the structure and function of the living body.
Lectures : 2 hours per week for two terms.

202 Invertebrate Zoology. Full Course. R. T. Cronin

Theory. The course begins with a study of scientific methodology and its application to the living sciences. The nature and characteristics of protoplasm are explained and these are correlated with a discussion of the cell as the unit of structure and function. These basic principles are then utilized in a detailed study of the phyla of the invertebrate animals.
Laboratory. A detailed study of representative animals of the invertebrate phyla. The first part offers intensive exercises in the use of the microscope and the interpretation of microscopic sections. The second half affords training in manual dexterity necessary for precise dissection.
Lectures : 2 hours per week for two terms.
Lab. : 3 hours per week for two terms.
Text : Storer and Usinger, *General Zoology*, McGraw-Hill.

304 Vertebrate Zoology Theory. Full Course. S. Drummond

The course opens with a study of the characteristics and classification of the vertebrates. The basic structure of the vertebrate body is outlined. Following this, the important type vertebrates are studied in detail, particular stress being laid on embryological development, structure and function.
Prerequisite : Biology 202 Theory.
Lectures : 2 hours per week for two terms.
Text : Storer and Usinger, *General Zoology*, McGraw-Hill.

305 Vertebrate Zoology Laboratory. Half Course.
S. Drummond

The course comprises a detailed study of the structure of amphioxus, dogfish, frog and rabbit. The course is so conducted that, by training in exact dissection, observation and the preparation of carefully executed drawings, the student may be able to trace the main features of organization from the lower to the higher vertebrates.
Prerequisite : Biology 202 Lab.
Lab. : 6 hours per week for two terms.
Text : Storer and Usinger, *General Zoology*, McGraw-Hill.
Craigie-Bensley, *Practical Anatomy of the Rabbit*. Univ. of Toronto Press.

406 Histology. Half Course. S. Drummond

Theory. An introductory study of the cell, cell division and the general tissues. The course is designed to explain in detail the structure and function of the basic tissues and to introduce the various combinations of these in the special tissues of the adult body.

Laboratory. A series of exercises designed to introduce the student to the fundamentals of cytological and histological technique, and to illustrate, by means of prepared slides, mitosis, meiosis, as well as the microscopic characteristics of the basic types of histological tissues.
Lectures : 2 hours per week for one term.
Lab. : 3 hours per week for one term.

408 Genetics. Half Course. R. T. Cronin

Theory. A series of lectures designed to explain the principles of heredity and variation.
Laboratory. A selection of experiments to demonstrate the methods and principles of genetics.
Lectures : 2 hours per week for one term.
Lab. : 3 hours per week for one term.

Courses leading to a B.A. with a Major in Biology-Chemistry.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Classics 102 or 121	BIOLOGY 202	BIOLOGY 304	BIOLOGY 406
English 101	CHEMISTRY 101	BIOLOGY 305	BIOLOGY 408
French	CHEMISTRY 102	CHEMISTRY 212	CHEMISTRY 212(a)
Mathematics 101	Classics 202 or	Philosophy	CHEMISTRY 221
Theology 101	221 or 222	Physics 101	CHEMISTRY 222
Elective	French	Theology	English (b)
	Philosophy		Mathematics 202
	Theology		Philosophy

(a) offered only in 1965-66.
(b) to be offered in 1966-67.

Courses leading to a B.Sc. with a Major in Biology-Chemistry.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
CHEMISTRY 101	BIOLOGY 202	BIOLOBY 304	BIOLOGY 406
CHEMISTRY 102	CHEMISTRY 212	BIOLOGY 305	BIOLOGY 408
French	CHEMISTRY 221	CHEMISTRY 323	CHEMISTRY 425
Mathematics 106	CHEMISTRY 222	CHEMISTRY 324	English (a)
Mathematics 107,	Philosophy	Philosophy	Mathematics 202
and 108 or 205	Theology		Philosophy
Mathematics 206			or Theology
Physics 101			Social Science
Theology 101			Elective (1)
			(a) to be offered
			in 1967-68

business

P. Kawaja Lecturer
L. A. Saint-Pierre Lecturer

Those interested in Business please consult the Director of Commerce.

201 Commercial Law. Full Course. L. A. Saint-Pierre

Laws of contracts, sales agency, partnership, company law and negotiable instruments.
Lectures : 3 hours per week for two terms.

204 Business Economics. Full Course. P. Kawaja

The theory of commodity price and output determination, and factor price determination, and an application of economic analysis to business decisions relating to products, competition, profits, cost, demand, price determination, advertising, and capital formation.

Lectures : 3 hours per week for two terms.
Texts : Due and Clower, *Intermediate Economic Analysis*, Richard D. Irwin, Fourth Edition. J. Dean, *Managerial Economics*. Prentice Hall.

301 Business Finance. Full Course. Prentice Hall
A survey of the financial problems associated with the establishment and operation of business enterprises.
Prerequisite : Accounting 202.

302 Marketing Management. Full Course. P. Kawaja
An introductory course that examines the job of th eMarketing Manager. Factors affecting consumer demand and methods of satisfying it; product management; marketing channels management; management of selling and customer services; management of pricing; marketing planning and control.
Texts : E. Jerome McCarthy, *Basic Marketing*. A Managerial Approach, Revised Edition. Richard D. Irwin

401 Security Analysis. Full Course.
A study of the principles and techniques relating to the analysis of securities of private business firms and of the criteria for the selection or rejection of issues.
Prerequisite : Business Finance 301.

402 Marketing Research. Full Fourse.
An examination of market research techniques and of sales analysis and operations research techniques applicable to market research. Application of market research to product selection, advertising and motivation research.

411 Administration of the Firm. Fourth Year. Full Course. P. Kawaja
An examination of the processes of management : planning, organizing, assembling resources, supervising and controlling. In addition to traditional management theory, relevant postulates from other disciplines are discussed. Emphasis is on ideas about organization and the place of statistics, probability and logic in decision making.
Lectures : 3 hours per week for two terms.
Texts : W. H. Newman, *Administrative Action*, Second Edition, Prentice Hall. W. H. Newmann, C. Summer, *The Process of Management*, Prentice Hall, W. H. Newman, *Cases for Administrative Action*, Prentice Hall.

chemistry

Rev. A. Graham, S.J., Associate Professor (Chairman)
K. Ekler Associate Professor
D. McElcheran Associate Professor
T. Nogrady Associate Professor
M. Doughty Assistant Professor

101 General Chemistry. Full Course. K. Ekler
Principles of Chemistry. Molecular and Atomic theories. Balancing Equations. Valence. Oxidation-reduction. Nature and concentrations of solutions. Chemical Equilibrium, Ionization constants. Solubility product. Common ion effect. pH. Formation and dissolution of precipitates. Complex ions. Theory of acids and bases. Periodic table.

Lectures : 3 hours per week for two terms.
Texts : Sisler, *College Chemistry*. 2nd ed., Macmillan. Sorum, *Introduction to Semimicro Qualitative Analysis*. 3rd ed., Prentice-Hall. Schaum, *Theory and Problems for Students of College Chemistry*. 4th ed., Schaum.

102 General Chemistry. Half Course. M. Doughty
An introductory course designed to improve manipulative ability in the laboratory. A first semester of inorganic preparations and volumetric titrations is followed by one devoted entirely to qualitative analysis.
Lab. : 3 hours per week for two terms.
Text : Sorum, *Semimicro Qualitative Analysis*. 3rd ed., Prentice-Hall.

211 Inorganic Chemistry and Valence Theory. Half Course. K. Ekler
Atomic and Molecular Structure. Valence. Electro-negativity. Bond angles and lengths. Coordination chemistry. Chemical periodicity.
Lectures : 1 hours per week for two terms.

212 Elementary Inorganic Quantitative Analysis. Full Course. K. Ekler
Theoretical aspects of gravimetric and volumetric analysis. Acid-base and oxidation-reduction titrations. Determination of ores by volumetric methods. Theory of precipitation and complex formation analysis.
Lectures : 1 hour per week for two terms.
Lab. : 3 hours per week for two terms.
Text : Kolthoff and Sandell, *Quantitative Inorganic Analysis*. Macmillan.

221 Organic Chemistry Theory. Full Course. M. Doughty
Introductory course in nomenclature, type reactions and synthesis of aliphatic, alicyclic and aromatic hydrocarbons and their derivatives. Theoretical aspects including resonance, orbital theory and simpler reaction mechanisms are introduced.
Prerequisite : Chemistry 101.
Lectures : 3 hours per week for two terms.
Text : English and Cassidy, *Principles of Organic Chemistry*. McGraw-Hill.

222 Organic Chemistry Laboratory. Half Course. A. Graham, T. Nogrady
A systematic preparation of simpler organic compounds; the theory of fundamental techniques such as steam distillation; filtration; the determination of physical constants. To be taken in conjunction with Chemistry 221.
Prerequisite : Chemistry 102.
Lab. : 3 hours per week for two terms.
Text : Cason and Rapoport, *Laboratory Text in Organic Chemistry*. Prentice-Hall.

231 Introductory Physical Chemistry. Full Course. D. McElcheran
The principles of physical chemistry, based on elementary kinetic theory and thermodynamics. Includes the following topics : the gas state, first and second laws of thermodynamics, liquid

and solid states, solutions, homogeneous and heteregeneous equilibria, reaction kinetics, electrochemical phenomena. Problems form an integral part of the course.
Lectures : 3 hours per week for two terms.

313 Quantitative Inorganic Analysis (Adv.). Full Course.
K. Ekler

A study of instrumental analytical methods. Electro-deposition; potentiometry; amperometry, absorption of radiation; gas analysis; ion exchange separations; polarography.
Prerequisite : Chemistry 211, 212.
Lectures : 1 hour per week for one term.
Lab. : 6 hours per week for one term.
Texts : Kolthoff and Laitinen, *pH and Electro Titration*. Wiley. Ewing, *Instrumental Methods of Chemical Analysis*. McGraw-Hill. Sandell, *Colorimetric Determination of Traces of Metals*. Interscience. Reilley and Sawyer, *Experiments for Instrumental Methods*. McGraw-Hill.

323 Organic Chemistry Theory. Full Course.
T. Nogrady

Critical review and extension of aliphatic and aromatic reactions; more intensive study of reaction mechanisms, stereoisomerism; carbohydrates; problems of synthesis and identification.
Prerequisite : Chemistry 221.
Lectures : 2 hours per week for two terms.
Text : Brewster and McEwen, *Organic Chemistry*. 3rd ed., Prentice-Hall.

324 Identification of Organic Compounds. Full Course.
A. Graham

Theory and practice of organic qualitative analysis : most of the laboratory time is given to the identification of unknown compounds and the separation and identification of a simple mixture.
Prerequisite : Chemistry 222.
Lectures : 1 hour per week for two terms.
Lab. : 3 hours per week for two terms.
Text : McElwain, *The Characterization of Organic Compounds*. Macmillan.

332 Advanced Physical Chemistry. Full Course.
D. McElcheran

Selected topics include : structure of solid state, surface phenomena, the colloidal state, phase rule.
Prerequisite : Chemistry 231.
Lectures : 2 hours per week for two terms.

333 Physical Chemistry Laboratory.
D. McElcheran

To be taken in conjunction with Chemistry 332.
Lab. : 4 hours per week (one afternoon) for two terms.
Text : Daniels *et al.*, *Experimental Physical Chemistry*. 5th ed., McGraw-Hill.

334 Thermodynamics. Full Course.
D. McElcheran

A thorough study of classical thermodynamics. Considerable emphasis placed on physical as well as chemical application.
Prerequisite : Chemistry 231; Mathematics 205.
Lectures : 2 hours per week for two terms.

425 Organic Chemistry Theory. Full Course.
A. Graham
T. Nogrady

Selected topics of organic chemistry, including terpenes, steroids, heterocyclic compounds, polymers and alkaloids. Reaction mechanisms and such stereochemical aspects as conformational analysis are treated extensively; the biological significance of many compounds is stressed.
Prerequisite : Chemistry 222, 323.
Lectures : 2 hours per week for two terms.

426 Organic Preparation Laboratory. Full Course.
A. Graham, T. Nogrady

The student performs a varying series of more difficult preparations and is expected to become proficient in such techniques as vacuum distillation, catalytic hydrogenation and the manipulation of larger scale bench equipment. A sound knowledge of theory is required.
Prerequisite : Chemistry 222, 324.
Lab. : 6 hours per week for two terms.
Text : Vogel, *A Text-Book of Practical Chemistry*. Longmans.

435 Advanced Physical Chemistry Laboratory. Full Course.
D. McElcheran

A continuation of Chemistry 333, but fewer and more demanding experiments.
Prerequisite : Chemistry 333.
Lab. : 4 hours per week for two terms.

436 Electrochemistry. Half Course.
K. Ekler

Electrolytic conduction and electrolysis : Faraday's laws; specific and equivalent conductance and measurement of conductance; mobility and transport number; theory of strong electrolytes; thermodynamics of cells; electrode potentials; concentration cells; liquid junction potentials; overvoltage and polarization phenomena.
Prerequisite : Chemistry 332, 334.
Lectures : 2 hours per week for one term.

437 Kinetic Theory and Chemical Kinetics. Full Course.
D. McElcheran

The classical atomic theory. Kinetic theory of gases; the statistical mechanical approach to the Maxwell-Boltzman Distribution; Collision phenomena. Reaction Kinetics. The rate laws; Classical collision theory; Activated State Theory; Reaction Mechanisms; Free Radical chemistry; Chain processes.
Prerequisite : Chemistry 332, 334.
Lectures : 2 hours per week for two terms.

438 Quantum Chemistry. Half Course.

The transition from classical to modern physics. Michelson-Morley experiment — special theory of relativity, Planck's Black Body Radiation, Photoelectric effect; Radioactivity and the fundamental particles; the Rutherford-Bohr atom. Schrodinger Wave Equation; Atomic Spectra, Molecular structure and bonding.
Lectures : 2 hours per week for one term.

450 Senior Thesis. Half Course. Staff

The Department will make available to selected students a senior thesis in Organic or Physical Chemistry to be done in the second term.

Courses leading to an Honours B.Sc. in Chemistry.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
CHEMISTRY 101	CHEMISTRY 211	CHEMISTRY 313	CHEMISTRY 425
CHEMISTRY 102	CHEMISTRY 212	CHEMISTRY 323	CHEMISTRY 426
French	CHEMISTRY 221	CHEMISTRY 324	CHEMISTRY 435
Mathematics 106	CHEMISTRY 222	CHEMISTRY 332	CHEMISTRY 436
Mathematics 205	CHEMISTRY 231	CHEMISTRY 333	CHEMISTRY 437
Mathematics 206	Philosophy	CHEMISTRY 334	CHEMISTRY 438
Physics 101	Theology	Mathematics 309	CHEMISTRY 450
Theology 101		Philosophy	English,
		Physics 205	Philosophy
			Elective or
			Theology Elective

Courses leading to a B.Sc. with a Major in Chemistry.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
CHEMISTRY 101	CHEMISTRY 211	CHEMISTRY 231	CHEMISTRY 332
CHEMISTRY 102	CHEMISTRY 212	CHEMISTRY 313	CHEMISTRY 333
French	CHEMISTRY 221	CHEMISTRY 323	CHEMISTRY 425
Mathematics 106	CHEMISTRY 222	CHEMISTRY 324	CHEMISTRY 426
Mathematics 206	Mathematics 205	Philosophy	CHEMISTRY 334
Mathematics 107	Philosophy		or 437
and 108, or 205	Theology		English,
Physics 101			Philosophy
Theology 101			Elective or
			Theology Elective

classics

J. E. Lempkowski, Assistant Professor (Chairman)
D. Brown Assistant Professor
Mrs. E. E. Cran Assistant Professor
D. C. Scavone Lecturer
Mrs. B. Wardy Lecturer

The requirements in Classics for Arts students may be fulfilled in the following ways :
a) Classics 102, 202.
b) Classics 112, 212.
c) Classics 121, 221.
Note : all students in Greek and Latin are required to provide themselves with dictionaries.

102 Latin Literature and Prose Composition. Full Course.
Staff

Cicero's *Pro Archia*, selections from the poems of Catullus and the *Odes* of Horace. Latin grammar is studied principally for the better comprehension of the authors, but also for the development of some facility in prose composition.
Prerequisite : Junior Matriculation Latin or Classics 101.
Lectures : 3 hours per week for two terms.

111 Elementary Greek. Full Course. (Not offered in 1965-66)

A course for those with no previous knowledge of Greek.
Lectures : 3 hours per week for two terms.

112 The Character of Socrates. Full Course. J. E. Lempkowski

A study of Socrates as he is portrayed in Plato's *Apology* and *Crito*, and caricatured in Aristophanes' *Clouds*.
Prerequisite : Junior Matriculation Greek or Classics 111.
Lectures : 3 hours per week for two terms.

121 Classics in Translation. Full Course.

E. E. Cran, D. C. Scavone

A. The Greek and Roman Historians. An examniation of the ancient historians' estimate of man's moral and social behavior, and the role he plays in the development of his time.
B. The Classical Epic. A study of the heroic character in the epics of Homer, Apollonius of Rhodes and Virgil, and of the style and methods of composition in their poems.
Lectures : 3 hours per week for two terms.

202 Latin Literature and Prose Composition. Full Course.
B. Wardy

Cicero's *Pro Lege Manilia*, and Books 2, 4 and 6 of the *Aeneid*. Advanced work in grammar and prose composition.
Prerequisite : Classics 102.
Lectures : 3 hours per week for two terms.

212 Homer : The Iliad. Full Course.

A study of the form, content and style of the earliest European epic. Books 1, 3, 6, 9, 16, 22, 24 in Greek; the entire work in English.
Prerequisite : Classics 112.
Lectures : 3 hours per week for two terms.

221 Classics in Translation. Full Course. E. E. Cran

A. Ancient Drama.
A study of selected plays by Aeschylus, Sophocles, Euripides, Aristophanes, Menander, Plautus and Terence.
B. Roman Satire.
The origin and development of the literary form which the Romans considered to be particularly their own. The *Satires* of Horace and Juvenal, Petronius' *Satyricon*.
Lectures : 3 hours per week for two terms.

302 Roman History and Biography. Full Course.

Livy, Book 1; Tacitus, *Agricola*. A consideration of the methods and style of the two writers.
Prerequisite : Classics 202
Lectures : 3 hours per week for two terms.

312 Herodotus and the Lyric Poets. Full Course.

Prerequisite : Classics 212.
Lectures : 3 hours per week for two terms.

330 History of Ancient Greece and Rome. Full Course.
D. C. Scavone

Lectures : 3 hours per week for two terms.

402 Poetry of the Augustan Age. Full Course.

J. E. Lempkowski

A detailed examination of the Roman elegists and Ovid's *Metamorphoses*.
Prerequisite : Classics 202.
Lectures : 3 hours per week for two terms.

412 Greek Tragedy. Full Course. (Not offered in 1965-66)
Aeschylus' *Choephoroi* and the *Electras* of Sophocles and Euripides in Greek; the entire *Oresteia* in English.
Prerequisite : Classics 212.
Lectures : 3 hours per week for two terms.

Courses Leading to a B.A. with a Major in Classics.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
CLASSICS 102	CLASSICS 202	CLASSICS 302	CLASSICS 303
English 101	CLASSICS	CLASSICS 402	CLASSICS 403
French	Elective (1)	Philosophy	Electives (2)
Mathematics 101	from 121,	Theology	Philosophy
Theology 101	221, 330	Elective (1)	
Elective (1)	English		
	French		
	Philosophy		
	Theology		

The course leading to a B.A. with a Major in Greek follows a similar pattern. Those interested should consult the Department Chairman.

computing centre

D. A. Bonyun Director
N. White Ass. to Director

The following courses are offered in Computing Science.

010 Fortran Programming.
A non-credit course offered to all students on a voluntary basis. The course includes basic Fortran programming techniques and sufficient card handling to enable the student to compile and run his own programs on the IBM 1620. This course is offered twice in the academic year.
Lectures : 1 hour per week for 8 weeks.

015 Machine Language Programming and SPS.
A non-credit course offered to all students on the basis of a selection test. The course is designed for students with a good pre-college mathematical background or with prior programming experience. Basic IBM 1620 machine language including iterative routines for square root and other basic functions is emphasized. The Symbolic Programming System, automatic coding, and introduction to compilers are included also.
Lectures : 1 hour per week.

105 Computers in Society. Full Course.
A history of Computers and the impact of present day electronic computers on society. The Abacus and simple counting machines, Turing machines and elementary recursive functions, desk calculators and the modern electronic digital computers. Sociological and economic implications of automation. Interdiscipline contributions to the theory of computer science.
Lectures : 2 hours per week for two terms.

201 Fortran Programming and Numerical Analysis. Full Course.

A detailed study of fundamentals of digital computers and related machinery. Binary numbers, floating point arithmetic, flow charting, simple machine language instructions, automatic coding in Fortran, assemblers, compilers etc. Numerical methods of interpolation, solution of polynomial equations and simultaneous equations, approximations, matrix manipulation, Monte Carlo techniques. Student use of the IBM 1620 will be emphasized.
Lectures : 2 hours per week for two terms.

305 Numerical Analysis and Fortran Programming for Engineers.
Offered only to engineering students as Engineering 350.

communication arts

Rev. J. E. O'Brien, S.J., Assistant-Professor (Chairman)
Rev. M. Gervais, S.J., Assistant-Professor

September, 1965, marks the establishment of the Department of Communication Arts. New Course offerings in cinema, drama, radio, and television will be added to the curriculum over the next two years.

201 Introduction to Mass Communications. Full Course.
A survey lecture course on the origins, development, effects, and responsibilities of mass communications.
Lectures : 3 hours per week for two terms.

301 The Art and Science of Communication. Full Course.
A study of communication theory and its application to oral and written communication with emphasis on radio and television copy.
Prerequisite : Communication Arts 201.
Lectures : 2 hours per week for two terms.
Lab. : 1 hour per week for two terms.

320 History and Literature of Music. Full Course.
This course is also listed as Music 101.
Lectures : 3 hours per week for two terms.

321 Drama in the Western World. Full Course.
This course is also listed as English 320.
Lectures : 3 hours per week for two terms.

322 The Novel. Full Course.
This course is also listed as English 340.
Lectures : 3 hours per week for two terms.

323 Modern Fictional Forms. Full Course.
This course is also listed as English 350.
Lectures : 3 hours per week for two terms.

Courses leading to a B.A. with a major in Communication Arts.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Classics 102 or 121	Classics 202 or 221 or 222	COMM. ARTS ELECTIVE (3)	COMM. ARTS ELECTIVES (4)
English 101	COMM. ARTS 201	Philosophy	Philosophy
French	English	Theology	
History 101	French		
Mathematics 101	Philosophy		
Theology	Theology		

economics

F. J. Hayes, Associate Professor (Chairman)
S. A. Alvi (on leave 1965-66) Assistant Professor
W. J. Carroll Assistant Professor
I. J. Masse Assistant Professor
P. V. Mini Assistant Professor
Rev. W. F. Ryan, S.J. Assistant Professor
L. Simcoe Assistant Professor
A. Vicas Assistant Professor
Mrs. E. Arrowsmith   Lecturer

102 Principles of Economics. Full Course.   Staff
A survey of the existing economic order, with particular emphasis on the North American Economy. Concentration is on explaining the operation of the price system as it regulates production, distribution, and consumption, and as it in turn is modified and influenced by private organization and government policy. Consideration is also given to the determination of aggregate economic activity. The main areas studied include: the monetary and banking systems in the United States and Canada; the composition and fluctuations of national income; and the major conditions of economic growth; all as influenced by monetary, fiscal and other policies.
Lectures: 3 hours per week for two terms.

204 Intermediate Economic Theory. Full Course.   Staff
In this course consideration will be given to such topics as: theory and measurement of demand; production functions; cost analysis; price and output policy under various market conditions; factor pricing; income and employment theory.
Lectures: 3 hours per week for two terms.

205 Intermediate Economic Theory (Honours). Full Course.
Lectures: 3 hours per week for two terms.   F. J. Hayes

207 Economic Method. Full Course.   A. Vicas
A study of selected topics in methods of economic analysis, including: the nature of valid arguments, the notion of sets of economic variables, the concept of rational behavior, differential calculus, game theory, linear programming.
Lectures: 3 hours per week for two terms.

301 Economic History. Full Course.   P. V. Mini
An analysis of the development of Western Europe, Canada and the United States.
Lectures: 3 hours per week for two terms.

302 Theories and Processes of Economic Growth and Development. Full Course.   W. F. Ryan, S.J.
A consideration of various contributions by economists and others to an understanding of how societies grow and undergo institutional change. The course also includes a study of the problem of accelerating economic growth, with emphasis on selected developing nations of the present time, an analysis of the process of capital formation, the role of the state (in different politico-economic systems), the role of external assistance in economic development, and the economics of investment decisions. Emphasis is also given to the interaction of cultural change and economic development.
Lectures: 3 hours per week for two terms.

304 Money, Banking, and Income Theory (Honours). Full Course.   P. V. Mini
Lectures: 3 hours per week for two terms.

305 Money, Banking, and Income Theory. Full Course.   L. Simcoe
The functions of money; money and prices; the evolution and kinds of money; the value of money; the supply of money; monetary and banking developments in Canada, the United States and the United Kingdom; the determinants of national income; the multiplier and acceleration principles, monetary and fiscal policy.
Lectures: 3 hours per week for two terms.

306 Labour Economics. Full Course. (not offered in 1965-66)
History of the labour movement in Europe, Canada and the U.S.; labour problems; the economics of labour; collective bargaining; case studies; the social teaching of the Church; labour legislation in England, Canada and the United States.
Lectures: 3 hours per week for two terms.

308 Applied Statistics. Full Course.   I. J. Masse
The application of statistical methods to economic problems including curve fitting, trend lines, seasonal variation, the measurement of cyclical fluctuations, correlation and index numbers.
Lectures: 3 hours per week for two terms.

310 History of Economic Thought. (Honours). Full Course.   W. J. Carroll
A critical review of economic thought since Plato and Aristotle.
Lectures: 3 hours per week for two terms.

312 Comparative Economic Systems. Full Course.   W. J. Carroll
The evolution of economic systems is discussed and evaluated in terms of modern economic theory, and from the point of view of economic efficiency and development.
Lectures: 3 hours per week for two terms.

313 Economics Fluctuations. Full Course.   I. J. Masse
Statistical aspects of the business cycle, the Kitchin, Juglar and Kondratieff cycles; monetary, overinvestment, and underconsumption theories of the cycle; Schumpeter's theory; the influence of some strategic factors; an eclectic theory of the cycle; economic growth, policy.
Lectures: 3 hours per week for two terms.

317 Mathematical Economics. (Honours) Full Course. (not offered in 1965-66)

Application of elementary mathematical techniques to economic analysis. Topics covered will include the Calculus, Theory of Determinants, Linear Programming, etc., and their applications to selected topics in economic theory.
Lectures : 3 hours per week for two terms.

407 International Trade. Full Course.   A. Vicas

Historical and economic background of international trade; the theory of international trade; balance of payments; international capital movements; foreign exchange; international commercial policies; international organization dealing with commercial policy.
Lectures : 3 hours per week for two terms.

411 Macro-Economic Analysis (Honours). Full Course

F. J. Hayes

A critical study of selected topics in Aggregative Economic Analysis.
Lectures : 3 hours per week for two terms.

415 Public Finance. Full Course.

A study of the principles and practices of public finance, with special reference to Canada.
Lectures : 3 hours per week for two terms.

416 Economic Policy. Full Course.   L. Simcoe

This course is devoted to examining economic policy in such areas as : business, agriculture, commerce, income redistribution, transportation, social security.
Lectures : 3 hours per week for two terms.

Courses leading to an Honours B.A. in Economics.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Classics 102 or 121	Classics 202 or	ECONOMICS 304	ECONOMICS 411
ECONOMICS 102	221 or 222	ECONOMICS 308	ECONOMICS
English 101	ECONOMICS 205	ECONOMICS 310	Elective (1)
French	ECONOMICS 207	Philosophy	English
Mathematics 101	French	Theology	Philosophy
Theology 101	Philosophy	Elective (1)	Theology
	Elective (1)		Elective (1)

Courses leading to a B.A. with a Major in Economics.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Classics 102	Classics 202 or	ECONOMICS 305	ECONOMICS
or 121	221 or 222	ECONOMICS 308	Elective (1)
ECONOMICS 102	ECONOMICS 204	Philosophy	English
English 101	ECONOMICS 207	Theology	Philosophy
French	French	Elective (1)	Theology
Mathematics 101	Philosophy		Elective (1)
Theology 101	Elective (1)		

Courses leading to an Honours B. Comm. in Economics.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Accounting 101	Business 201	ECONOMICS 304	ECONOMICS 411
ECONOMICS 102	ECONOMICS 205	ECONOMICS 308	ECONOMICS
English 101	ECONOMICS 207	ECONOMICS 310	Elective (1)
French	French	Philosophy	Philosophy or
Mathematics 101	Philosophy	Theology	Acct. or Business
Theology 101	Elective (1)	Elective (1)	Elective (1)
			Theology

Courses leading to a B. Comm. with a Major in Economics.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Accounting 101	Accounting 204	ECONOMICS 305	ECONOMICS
ECONOMICS 102	Business 201	ECONOMICS 308	Elective (1)
English 101	ECONOMICS 204	Philosophy	English
French	ECONOMICS 207	Theology	Philosophy
Mathematics 101	French	Elective (1)	or Theology
Theology 101	Philosophy		Electives (2)

Notes (a) Of the three Electives, one must be selected from the faculty in which the student is registered; the other two may be selected from any faculty subject to the approval of the department which offers the course.

(b) The Economics Department may permit a third-year major student to take *one* additional approved course, if a 70% average and a record clear of supplementals, repeat courses, etc., has been maintained in the preceding two years.

engineering

G. W. Joly Associate Dean (Chairman)
D. J. McDougall Associate Professor
S. Yalcin Associate Professor
D. Hudson Assistant Professor
K. I. Krakow Assistant Professor
S. J. Kubina, Assistant Professor
S. A. Neilson .   Lecturer
J. B. Phillips   Special Lecturer
Rev. H. Wardell, S.J.   Instructor

The Faculty of Engineering offers a five year program in Civil, Electrical and Mechanical Engineering, and a three year program in Chemical Engineering. The courses of the First and the Second Year are common for all students. Specialization commences for all students in the Third Year.

Students registered in Civil, Electrical and Mechanical Engineering achieve their degree in Engineering at the end of the Fifth Year at Loyola. Students in Chemical Engineering at the end of the Third Year will go on to complete their course and achieve their degree at another university after a further two years of study.

Students of the First and Second Year of Engineering are invited to consult the Dean of Engineering or any member of the staff about the specialization in which they expect to engage in the Third and succeeding years.

promotion

For promotion, an overall average of at least 60% of the weighted marks is required, and at least 50% in each separate examination. A student who fails to achieve promotion and wishes to discuss the possibility of continuing his academic career in the Faculty of Engineering must apply IN WRITING to the Chairman, Engineering, before July 15.

admissions

The requirements for admission are as follows :

Canadian Applicants

to first year :

1. For consideration for entry, an applicant must have :
   a) achieved Junior Matriculation;
   b) passed 11 papers in June, amongst which must be :
   English (2 papers),   Physics,
   Intermediate Algebra,   Chemistry;
   Trigonometry,
   c) achieved an overall average of at least 70% in these 11 papers and a good second class mark in the compulsory ones listed in b) shown.
2. Canadian applicants whose qualifications are different from those above should apply IN WRITING to Loyola College for a review of them.

to second year :

1. a) achieved Senior Matriculation;
   b) passed 10 papers in June, amongst which must be :
   English (2 papers),   Chemistry,
   French (2 papers),   Analytical Geometry,
   Physics,   Calculus;
   c) achieved an overall average of at least 70% in the 10 papers.
2. Canadian applicants whose qualifications are different from those above should apply IN WRITING to Loyola College for a review of them.
3. If possible, students entering the Senior Matriculation class, should consult with the Associate Dean of Engineering at Loyola about the courses they are following in order to ensure that they will not be deficient to enter Loyola.

applicants from abroad

to first and second year :

Applicants who consider that their qualifications are equivalent to those specified for Canadian students are invited to submit them to Loyola College for review.

102   Engineering Problems.   G. W. Joly

This course is the complement of the lectures in the Mathematics of First Year and seeks to unite the theory and practice of Mathematics as related to Engineering. Problems are set up and solved by the student himself.
Lectures : 2 hours problems per week for two terms.

103   Mechanics I   G. W. Joly

Position, velocity and acceleration of a rigid body executing plane motion. Relative motion. A preliminary study of the dynamics of curvilinear plane motion in order to establish the principles of center of gravity and moment of inertia, followed by a development of these ideas in depth. So as to prepare the student for the later presentation of static equilibrium as a special case of dynamics, Mechanics I commences with the intuitional view of the conditions of static equilibrium through a study of simple space frames.
Lectures : 2 hrs. per week, both terms.

121   Engineering Graphics I.   H. Wardell

Orthographic projection, auxiliary and oblique views, dimensioning, sectioning. Geometrical construction of ellipses, hyperbolas, cycloids, involutes, etc. Pictorial drawings including isometric, oblique. Common machine elements; screws, welding, structural shapes. Free-hand sketching, working and assembly drawings.
Lectures : 1 hr. per week for two terms.
Lab . 2 hrs. per week for two terms.
Text : French, Engineering Drawing, McGraw-Hill.

161   Professional Practice I.   S. A. Neilson

Use of English, both oral and written in engineering practice, mechanics of presentation, graphical representation, reproduction methods, job applications; specifications.
Lecture : One hour per week, both terms.

202   Engineering Problems.   Staff

This course is the complement of the lectures in the Mathematics of Second Year and seeks to unite the theory and practice of Mathematics as related to Engineering. Problems are set up and solved by the student himself.
Lectures : 2 hours problems per week for two terms.

203   Mechanics II.   G. W. Joly

The three general approaches to dynamics : torque and inertia-acceleration, work and kinetic energy, impulse and momentum. The selection of the appropriate general approach in each problem is emphasized and numerical results are expected. Forces in rotating bodies. Gyroscopes.
Lectures : 2 hours per week, both terms.

220   Mechanical Drawing (1965-6 only).   H. Wardell

Geometrical construction of ellipses, hyperbolas, cycloids, involutes, etc. Pictorial drawings including isometric, oblique, common machine elements : screws, welding, piping, gears, pulleys and structural shapes; free-hand sketching, work and assembly drawings.
Lectures : 1 hour per week for two terms.
Lab : 2 hrs. per week for two terms.

221   Engineering Graphics II.   H. Wardell

Theory of orthographic projection, auxiliary views, lines, planes, intersections, dihedral angles, parallelism, perpendicularity, revolution, developments, mining and civil engineering problems involving principles covered in the course.
Lectures : 1 hour per week for two terms.
Lab : 2 hrs. per week for two terms.
Text : Descriptive Geometry. Paré-Loving-Hill.

261   Professional Practice II.   S. A. Neilson

Continuation of Course 161 with emphasis on Public Speaking — Conference Techniques, etc.
Lectures : 1 hour per week, both terms.

302   Systems Analysis I.   K. Krakow

The application of Mathematics to the solutions of Civil, Electrical and Mechanical Engineering problems.
Text : Haberman, C. M. — *Engineering Systems Analysis.*
Lectures : 2 hours problems per week, both terms.

303 Chemical Engineering Principles. J. B. Phillips
Application of physical and chemical principles to some fundamental problems in Chemical Engineering.
Lectures : 2 hrs. per week, both terms.
Lab : 3 hrs, per week, both terms.

322 Materials Science I.
A systematic approach to the study of properties and behaviour of engineering materials including, the fundamental properties of materials, metallic phases, multiphase materials, structural effects on properties, stability under service stresses; thermal, electrical, chemical properties and corrosion; organic and non-metallic materials.
Lectures : 2 hours per week for two terms.

340 Thermodynamics. Half Course. K. Krakow
An introduction to thermodynamic properties; laws and processes; gas and vapor cycles, properties of mixtures; heat radiation conduction and connection.
Lectures : 3 hrs. per week, second term.

341 Strength of Materials. G. W. Joly
Elastic Theory of matter; axial, thermal and bending stresses; combined stress, tension, deflection of beams by differential equation of elastic line, moment area, superposition and conjugate beam methods; statically indeterminate beams; energy of strain; introduction of photostress analysis and theory of models.
Lectures : 2 hours per week for both terms.
Lab : 3 hours per week for second term (combined with Materials Science 422.
Reference Books : Timoshenko and Young, *Elements of Strength of Materials*. Van Nostrand.

344 Circuit Analysis. D. Hudson
The fundamentals of the analysis of linear circuits to steady, time varying, periodic and non-periodic circuits and voltages; general analysis; network theorems; active network analysis; time frequency domain relationships; polyphase circuits; Fourier series, Laplace transforms.
Lectures : 2 hours per week for two terms.
Lab : 3 hours per week for two terms.
Reference Book : Walsh and Miller, *Electric Circuits*, McGraw-Hill.

345 Circuit Analysis. D. Hudson
Modified form of Engineering 344, given in one term.
Lectures : 2 hours per week for first term.
Lab : 3 hours per week for first term.
Reference Book : Walsh and Miller, *Electric Circuits*, McGraw-Hill.

350 Numerical Analysis & Computation Methods.
D. Hudson & D. A. Bonyun
An introduction to scientific computing and the basic ideas of numerical analysis. Use of mechanical calculating machines and IBM 1620 Computer.
Lectures : 2 hours per week, one term.
Computer Lab : 2 hours per week, one term.
Texts : W. Jennings — *First Course in Numerical Methods*. Chapters 1 - 15. D. D. McCracken — *A Guide to Fortran Programming*.

360 Technical Report. S. A. Neilson
Students entering the Third Year of Engineering must submit a Technical Report. The most suitable subject for the Report is a topic drawn from the experience during his summer work. If, however, a student's summer experience does not provide a reasonable topic, he may visit and inspect any engineering, scientific or industrial project in course of construction or operation, and write upon his observations. The Report should be between 2000 and 4000 words in length and must be handed in not later than Registration Day.

361 Professional Practice III. S. A. Neilson
History and development of Engineering.
Lectures : 1 hour per week, both terms.

402 Systems Analysis II. K. Krakow
The application of Mathematics to the solution of Civil, Electrical and Mechanical Engineering problems.
Lectures : 2 hours problems per week, both terms.
Text : Alexander, J. E. and Bailey, J. M. — *Systems Engineering Mathematics*.

410 Mechanics (1965/6 only). K. I. Krakow
Translation and rotation of rigid bodies. Impact. Conservation of angular momentum. Gyroscopes.
Lectures : 2 hours per week for first term.

412 Mechanics of Machines. K. I. Krakow
Constrained motion; instant centers; controdes; analysis and classification of simple mechanisms; including the quadriccrank, the slidercrank and wheel trains, design of involute gear teeth; belts and flexible couplings; cam design.
Lectures : 2 hours per week for second term.
Lab : 3 hours per week for second term.

420 Machine Drawing. K. I. Krakow
Engineering drafting room procedure and technique in the production of working drawings of machinery, correlation between processes and design.
Lab : 3 hours per week for first term.

422 Materials Science II. D. Hudson, K. I. Krakow, H. Wardell
A theoretical and experimental study of metallic and non-metallic materials, their properties and processes used to control and alter their properties, their mechanical behaviour and experimental techniques used in investigating their behaviour, and the relation between mechanical behaviour and the physical and chemical properties of materials.
Lectures : 1 hour per week for two terms.
Lab : 3 hrs. per week for two terms.

433 Surveying I.
a) Theory (24 lectures in May).
  Measurements of distances, elevations, angles. Traverses and computation of areas. Stadia measurements. Errors.
b) Field School (in May).
  Use and care of surveying instruments. Tape measurements and traverse work. Rod and level exercises. Transit and tape measurements. Grid and Area computations. Stadia work and map project.

439 Surveying II. S. Yalcin

Route surveys involving simple, transition and vertical curves. Grades, cross sections, earth-work computations. Principles of field astronomy. Triangulation. Hydrographic surveying. Use of planimeter and aerial photographs in surveying work.
Lectures : 2 hours per week, second term.
Lab : 1 hour per week, second term.

460 Technical Report. S. A. Neilson

Students entering the Fourth Year of the Engineering course must submit a Technical Report, similar to 360 which in this case should be between 3000 and 5000 words in length. This Report must be handed in on Registration Day.

First year engineering

Course	Course Number	Weighted Mark	Lectures hours per week		Lab. etc. hrs. per week	
			First Term	Second Term	First Term	Second Term
CHEMISTRY	101/2	150	3	3	3	3
ENGINEERING PROBLEMS	102	50	—	—	2	2
MECHANICS I	103	100	2	2	2	—
ENGINEERING GRAPHICS	121	100	1	1	2	2
PROFESSIONAL PRACTICE I	161	50	1	1	—	—
ENGLISH	101	100	3	3	—	—
FRENCH	120	100	2	2	1	1
CALCULUS	110	100	3	3	—	—
TOTAL :		750	15	15	10	8

Second year engineering

Course	Course Number	Weighted Mark	Lecture hours per week		Lab. etc. hrs. per week	
			First Term	Second Term	First Term	Second Term
PHYSICAL CHEMISTRY	231	100	3	3	—	—
ENGINEERING PROBLEMS	202	50	—	—	2	2
MECHANICS II	203	100	2	2	—	2*
***ENGINEERING DRAWING	220	50	—	—	—	—
ENGINEERING GRAPHICS II	221	100	1	1	2	2
PROFESSIONAL PRACTICE II	261	50	1	1	—	—
**TECHNICAL REPORT	360	—	—	—	—	—
ALGEBRA	209	100	2	2	—	—
CALCULUS	210	100	2	2	—	—
PHILOSOPHY	—	100	2	2	—	—
THEOLOGY	101	100	2	2	—	—
TOTAL :		800	15	15	4	6

*In 1965/66 only.
**Prepared in summer following Second Year and counted as part of Third Year marks.
***In 1965/66 only. Special Course; September 1965.

Third year engineering - chemical

Course	Course Number	Weighted Mark	Lecture hours per week		Lab. etc. hrs. per week	
			First Term	Second Term	First Term	Second Term
*PROFESSIONAL PRACTICE I	161	50	1	1	—	—
**MECHANICS II	203	100	2	2	—	—
***ENGINEERING DRAWING	220	50	—	—	—	—
CHEMICAL ENG. PRINCIPLES	303	150	2	2	2	2
STRENGTH OF MATERIALS	341	100	2	2	—	—
CIRCUIT ANALYSIS	345	50	2	—	3	—
NUMERICAL ANALYSIS	350	50	—	2	—	2
****TECHNICAL REPORT	360	100	—	—	—	—
*****ELECTRICITY & MAGNETISM	—	—	—	—	—	—
******CALCULUS	308	100	2	2	—	—
INORGANIC CHEMISTRY	211	50	1	1	—	—
ORGANIC CHEMISTRY	221	100	3	3	—	—
PHYSICAL CHEMISTRY LAB.	333	100	—	—	4	4
TOTAL :		1000	15	15	9	8

*To be replaced by Professional Practice III in 1966/67.
**In 1965/66 only.
***In 1965/66 only. Special course in September 1965.
****Prepared in summer preceding Third Year, except 1965.
*****To commence in 1966/67.
******New course in 1966/67.

Third year engineering - civil

Course	Course Number	Weighted Mark	Lecture hours per week		Lab. etc. hrs. per week	
			First Term	Second Term	First Term	Second Term
*PROFESSIONAL PRACTICE I	161	50	1	1	—	—
**MECHANICS II	203	100	2	2	—	—
***ENGINEERING DRAWING	220	50	—	—	—	—
SYSTEMS ANALYSIS I	302	50	—	—	2	2
MATERIALS SCIENCE I	322	100	2	2	—	—
THERMODYNAMICS I	340	50	—	3	—	—
STRENGTH OF MATERIALS	341	100	2	2	—	—
CIRCUIT ANALYSIS	345	50	2	—	3	—
NUMERICAL ANALYSIS	350	50	—	2	—	2
****TECHNICAL REPORT	360	—	—	—	—	—
*****ELECTRICITY & MAGNETISM	—	—	—	—	—	—
******CALCULUS	308	100	2	2	—	—
*******SURVEYING I	433	—	—	—	—	—
GEOTECHNICAL SCIENCE	300	150	3	2	3	2
PHILOSOPHY	—	100	2	2	—	—
THEOLOGY	—	100	2	2	—	—
TOTAL :		1050	18	20	8	6

*To be replaced by Professional Practice III in 1966/67.
**In 1965/66 only.
***In 1965/66 only. Special course in September 1965.
****Prepared in summer preceding Third Year (except 1965). Counted as part of Fourth Year.
*****To commence in 1966/67.
******New course in 1966/67.
*******Done in May following Third Year. Counted as part of Fourth Year.

Third year engineering - electrical

Course	Course Number	Weighted Mark	Lecture hours per week		Lab. etc. hrs. per week	
			First Term	Second Term	First Term	Second Term
*PROFESSIONAL PRACTICE I	161	50	1	1	—	—
**MECHANICS II	203	100	2	2	—	—
***ENGINEERING DRAWING	220	50	—	—	—	—
SYSTEMS ANALYSIS I	302	50	—	—	2	2
MATERIALS SCIENCE I	322	100	2	2	—	—
THERMODYNAMICS I	340	50	—	3	—	—
STRENGTH OF MATERIALS	341	100	2	2	—	—
CIRCUIT ANALYSIS	344	100	2	2	3	3
NUMERICAL ANALYSIS	350	50	2	—	2	—
****TECHNICAL REPORT	360	—	—	—	—	—
*****ELECTRICITY & MAGNETISM	—	—	—	—	—	—
******CALCULUS	308	100	2	2	—	—
*******SURVEYING I	433	—	—	—	—	—
PHILOSOPHY	—	100	2	2	—	—
THEOLOGY	—	100	2	2	—	—
TOTAL :	—	950	17	18	7	5

*To be replaced by Professional Practice III in 1966/67.
**In 1965/66 only.
***In 1965/66 only. Special course in September 1965.
****Prepared in summer preceding Third Year (Except 1965). Counted as part of Fourth Year.
*****To commence in 1966/67.
******New course in 1966/67.
*******Done in May following Third Year. Counted as part of Fourth Year.

Third year engineering - mechanical

Course	Course Number	Weighted Mark	Lecture hours per week		Lab. etc. hrs. per week	
			First Term	'Second Term	First Term	Second Term
*PROFESSIONAL PRACTICE I	161	50	1	1	—	—
**MECHANICS II	203	100	2	2	—	—
***ENGINEERING DRAWING	220	50	—	—	—	—
SYSTEMS ANALYSIS I	302	50	—	—	2	2
MATERIALS SCIENCE I	322	100	2	2	—	—
THERMODYNAMICS I	340	50	—	3	—	—
STRENGTH OF MATERIALS	341	100	2	2	—	—
CIRCUIT ANALYSIS	345	50	2	—	3	—
NUMERICAL ANALYSIS	350	50	—	2	—	2
****TECHNICAL REPORT	360	—	—	—	—	—
*****ELECTRICITY & MAGNETISM	—	—	—	—	—	—
******CALCULUS	308	100	2	2	—	—
*******SURVEYING I	433	—	—	—	—	—
PHILOSOPHY	—	100	2	2	—	—
THEOLOGY	—	100	2	2	—	—
TOTAL :		900	15	18	5	4

*To be replaced by Professional Practice III in 1966/67.
**In 1065/66 only.
***In 1965/66 only. Special course in September 1965.
****Prepared in summer preceding Third Year (Except 1965). Counted as part of Fourth Year.
*****To commence in 1966/67.
******New course in 1966/67.
*******Done in May following Third Year. Counted as part of Fourth Year.

*Fourth year (B.Sc.) engineering - chemical

Course	Course Number	Weighted Mark	Lecture hours per week		Lab. etc. hrs. per week	
			First Term	Second Term	First Term	Second Term
CHEMICAL ENG. PRINCIPLES	303	100	2	2	2	2
STRENGTH OF MATERIALS	341	100	2	2	—	—
CIRCUIT ANALYSIS	345	50	2	—	3	—
NUMERICAL ANALYSIS	350	50	—	2	—	2
PROFESSIONAL PRACTICE III	361	50	1	1	—	—
TECHNICAL REPORT	460	100	—	—	—	—
ENGLISH	—	100	2	2	—	—
MATHEMATICS	308	100	2	2	—	—
ORGANIC CHEMISTRY	221	100	3	3	—	—
PHYSICAL CHEMISTRY LAB.	333	100	—	—	4	4
TOTAL :		850	14	14	9	8

*This program is offered for the last time in 1965/66.

*Fourth year (B.Sc.) engineering - civil

Course	Course Number	Weighted Mark	Lecture hours per week		Lab. etc. hrs. per week	
			First Term	Second Term	First Term	Second Term
STRENGTH OF MATERIALS	341	100	2	2	—	—
CIRCUIT ANALYSIS	345	50	2	—	3	—
NUMERICAL ANALYSIS	350	50	2	—	2	—
PROFESSIONAL PRACTICE III	361	50	1	1	—	—
SYSTEMS ANALYSIS II	402	50	—	—	2	2
MECHANICS	410	50	2	—	—	3
MECHANICS OF MACHINES	412	50	—	2	—	3
MATERIALS SCIENCE II	422	100	1	1	3	3
**SURVEYING I	433	100				
SURVEYING II	439	50	—	2	—	1
TECHNICAL REPORT	460	100	—	—	—	—
GEOTECHNICAL SCIENCE	401	100	2	2	2	2
MATHEMATICS	308	100	2	2	—	—
ENGLISH	—	100	2	2	—	—
TOTAL :		1050	16	14	12	11

*This program is offered for the last time in 1965/66. To be replaced.
**Done in May following Third year.
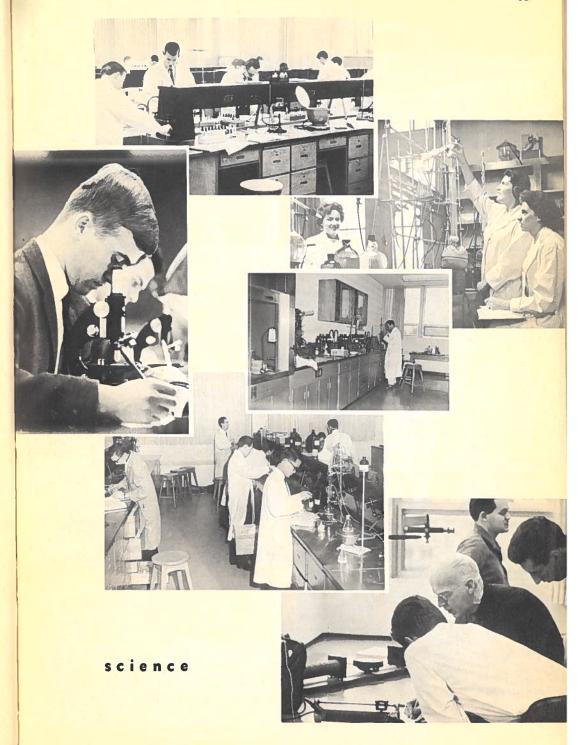
*Fourth year (B.Sc.) engineering - electrical

Course	Course Number	Weighted Mark	Lecture hours per week		Lab. etc. hrs. per week	
			First Term	Second Term	First Term	Second Term
STRENGTH OF MATERIAL	341	100	2	2	—	—
CIRCUIT ANALYSIS	344	100	2	2	3	3
NUMERICAL ANALYSIS	350	50	—	2	—	2
PROFESSIONAL PRACTICE III	361	50	1	1	—	—
SYSTEMS ANALYSIS II	402	50	—	—	2	2
MECHANICS	410	50	2	—	—	—
MATERIALS SCIENCE II	422	100	1	1	3	3
**SURVEYING I	433	100	—	—	—	—
TECHNICAL REPORT	460	100	—	—	—	—
MATHEMATICS	308	100	2	2	—	—
ENGLISH	—	100	2	2	—	—
PHYSICS		50	3	—	—	—
TOTAL :		950	15	12	8	10

*This program is offered for the last time in 1965/66. To be replaced.
**Done in May following Third Year.

*Fourth year (B.Sc.) Engineering - mechanical

Course	Course Number	Weighted Mark	Lecture hours per week		Lab. etc. hrs. per week	
			First Term	Second Term	First Term	Second Term
STRENGTH OF MATERIALS	341	100	2	2	—	—
CIRCUIT ANALYSIS	345	50	2	—	3	—
NUMERICAL ANALYSIS	350	50	—	2	—	2
PROFESSIONAL PRACTICE III	361	50	1	1	—	—
SYSTEMS ANALYSIS II	402	50	—	—	2	2
MECHANICS	410	50	2	—	—	—
MECHANICS OF MACHINES	412	50	—	2	—	3
MECHANICAL DESIGN	420	50	—	—	3	—
MATERIALS SCIENCE II	422	100	1	1	3	3
**SURVEYING I	433	100	—	—	—	—
TECHNICAL REPORT	460	100	—	—	—	—
MATHEMATICS	308	100	2	2	—	—
ENGLISH	—	100	2	2	—	—
TOTAL :		950	12	12	11	

*This program is offered for the last time in 1965/66. To be replaced.
**Done in May following Third year.

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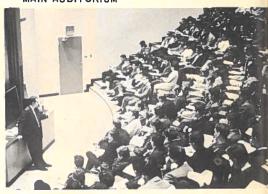
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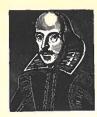
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Rev. G. MacGuigan, S.J. Associate Professor
M. Blanar Associate Professor
J. Buell Associate Professor
J. T. Rooney Assistant Professor
R. S. Wareham Assistant Professor
K. Waters Assistant Professor
A. Raspa Assistant Professor
P. Sehgel Lecturer

101 First Year. Full Course. M. Blanar and Instructors
English literature and composition, with private tutorials.
Texts : Selected paperbacks.
Lectures : 3 hours per week for two terms.

110H Chaucer. Full Course. A. G. Hooper
Lectures : 3 hours per week for two terms.

120H Spenser and his Background. Full Course.
R. S. Wareham
Spenser's works, in particular *The Shepheardes Calendar* and *The Faerie Queene* : the background of Elizabethan politics, religion, ethics, psychology, and literary theory; the influence of Courtly Love, Humanism, and Neoplatonism; the traditions of pastóral, epic, romance, and allegory.
Lectures : 3 hours per week for two terms.

130H Shakespeare. Full Course. J. Buell
The comedies, tragedies and historical plays of Shakespeare, with due attention given to his times, his development, and the body of Shakespearean criticism.
Lectures : 3 hours per week for two terms.

140G Milton and the Seventeenth Century. Full Course.
Lectures : 3 hours per week for two terms. A. Raspa

150H Dryden and Pope. Full Course. M. Blanar
Lectures : 3 hours per week for two terms.

160H Swift and Johnson. Full Course. (not offered 1965-66)
A study of *satire* and Swift's major and minor works; neo-classicism, Boswell's *Life of Johnson* and selections from Johnson's works.
Lectures : 3 hours per week for two terms.

220 Medieval and Renaissance Literature. Full Course. (not offered in 1965-66)
Lectures : 3 hours per week for two terms.

240 Restoration and Eighteenth-Century Literature. Full Course. (not offered in 1965-66)
Lectures : 3 hours per week for two terms.

250H Nineteenth-Century Poetry. Full Course. (not offered in 1965-66)
Lectures : 3 hours per week for two terms.

260H Thought and Literature in Nineteenth-Century England. Full Course. J. Rooney
The course is designed as an introduction to some of the major intellectual and social trends affecting literature in nineteenth-century England. It will be based upon a critical study of works by Jane Austen, S.T. Coleridge, Wordsworth, Mill, Newman, Carlyle, Arnold, George Eliot, and others.
Lectures : 3 hours per week for two terms.

270 Nineteenth-Century Literature. Full Course. P. Sehgal
Lectures : 3 hours per week for two terms.

280H Modern Literature. Full Course. K. Waters
Lectures : 3 hours per week for two terms.

290 Modern Literature. Full Course. (not offered 1965-66)
Lectures : 3 hours per week for two terms.

320 Drama in the Western World. Full Course. (not offered in 1965-66)
Lectures : 3 hours per week for two terms.

330 Elizabethan and Jacobean Drama. Full Course.
Lectures : 3 hours per week for two terms. A. G. Hooper

340H The 19th Century Novel (English and Continental)
Lectures : 3 hours per week for two terms. J. Rooney

350 Modern Fictional Forms. Full Course. J. Buell
Lectures : 3 hours per week for two terms.

360H Poetry. Full Course. K. Waters
Lectures : 3 hours per week for two terms.

370 Literature, Ideas and Myths. Full Course.
R. S. Wareham
A course for general Arts students.
Texts : *The Epic of Gilgamesh. The Prophecy of Isaias. The Republic of Plato.* Virgil, *The Aeneid.* Augustine, *The City of God.* Boethius, *The Consolation of Philosophy. The Romance of Tristan and Iseult.* Shakespeare, *King Lear.* Marvell's poetry. Swift, *Gulliver's Travels.* Dostoyevsky, *Crime and Punishment. The Communist Manifesto.*
Lectures : 3 hours per week for two terms.

380 Literary Genres. Full Course. (not offered in 1965-66)
An attempt to arrive at definitions of some of the *kinds* of literature, such as *comedy* and *tragedy*, by means of a comparative study of a large number of representative works.
Lectures : 3 hours per week for two terms.

410H The English Language. Half Course. (not offered in 1965-66)
Lectures : 2 hours per week for one term.

420H Anglo-Saxon Language and Literature. Half Course. (not offered in 1965-66)

Lectures : 2 hours per week for two terms.

430H Middle English Language. (not offered in 1965-66)

Lectures : 3 hours per week for one term.

440 Advanced Prose Composition. Half Course.

G. MacGuigan

A theoretical and practical study of prose style to make the student familiar with and competent in the use of the main prose traditions. A reading of treatises on style from Aristotle and Longinus to the present time is required.

Lectures : 2 hours per week for two terms.

Texts : Aristotle, *Rhetoric*. Weaver, *The Ethics of Rhetoric*. Auerback, *Mimesis*. Whately, *Elements of Rhetoric*. Donnelly, *Persuasive Speech*. Read, *English Prose Style*. Whitehall, *Structural Elements of English*. Other selections to be announced.

510 Principles and Practice of Literature. Full Course. (not offered in 1965-66)

A course designed to acquaint the student with the nature of literature, its various genres, its levels, and basic critical positions and problems.

Lectures : 3 hours per week for two terms.

Texts : including Aristotle, *Poetics*. Blair and Gerber, *Better Reading*. vol. 2. Daiches, *Critical Approaches to Literature*.

520H Practical Criticism. Full Course.

A. G. Hooper

Lectures : 1 hour per week over three years.

530H Criticism. Full Course. (not offered in 1965-66)

A study of the major theories of literature from Aristotle to the present. The course presumes wide reading in literature and some familiarity with the history of philosophy.

Lectures : 3 hours per week for two terms.

Texts : including Bates, *Criticism : The Major Texts*. Frye, *Anatomy of Criticism*. Lonergan, *Insight*.

610 Canadian Literature. Half Course. (not offered in 1965-66)
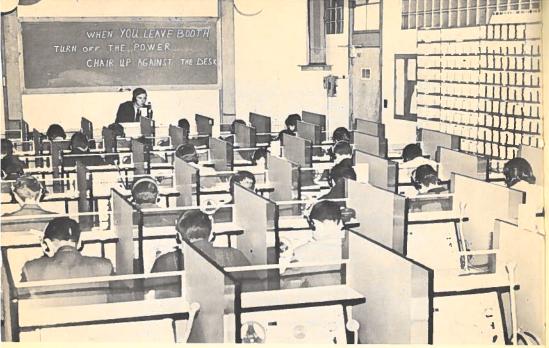
Lectures : 3 hours per week for one term.

620 American Literature. Half Course. (not offered in 1965-66)

Lectures : 3 hours per week for one term.

Courses leading to an Honours B.A. in English.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Classics 102 or 121	Classics 202 or 221 or 222	ENGLISH 130	ENGLISH Electives (3) from 110,
ENGLISH 101	ENGLISH 260H	ENGLISH 260H	120, 150, 280
French	ENGLISH 360	ENGLISH Elective (1) from 110	Philosophy
History 101	ENGLISH 520 or 440	280	Philosophy
Mathematics 101	French	Philosophy	Elective (1)
Theology 101	Philosophy	Theology	
	Theology		

Courses leading to a B.A. with a Major in English.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Classics 102 or 121	Classics 202 or 221 or 222	ENGLISH 140, 360	ENGLISH 140
ENGLISH 101	ENGLISH 340 or 350	Philosophy	ENGLISH 360
French	ENGLISH 140 or 230	Theology	Philosophy
History 101	French	Elective (1)	Electives (2)
Mathematics 101	Philosophy		
Theology 101	Theology		
	Elective (1)		

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french studies

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P. Toupin Associate Professor
Rev. A. Nelson, S.J. Associate Professor
M. Andersen Assistant Professor
M. Langumier Assistant Professor
G. W. Andersen Assistant Professor
C. Rouben Lecturer
A. Berthiaume Lecturer
A. L. Murphy Lecturer
J. Costa Lecturer
Z. Youssef Lecturer
M. Pavitt Lecturer
D. Yates Lecturer
J. Makriss (on study leave) Lecturer
L. W. Sugden (on study leave) Lecturer
M. Tiffou Instructor
M. R. Blei Instructor

100 Language : Basic French D. Yates
Essentials of phonetics and grammar with emphasis on oral-aural skills. A lecture and laboratory course for foreign students only.
Three hours per week for two terms.

120 Language : Elementary French C. Rouben & Staff
Study of written and spoken patterns in particular. Phonetics, grammar, composition and prescribed readings. A lecture and laboratory course for students who have some knowledge of written but little or no practice in oral French.
Three hours per week for two terms.

124 Language : Intermediate French. A. L. Murphy & Staff
Spoken and written structures by means of phonetics, grammar, composition and selected readings. A lecture and laboratory course for students who have successfully completed four years of High School French.
Three hours per week for two terms.

128 Language : Advanced French. M. Langumier & Staff
Concentration on oral and written structures. Corrective phonetics, review grammar, oral and written composition, discussion topics and selected readings. A lecture and part-time laboratory course for students who have a good knowledge of spoken and written French.
Three hours per week for two terms.

130 Language and Literature.
P. Toupin, A. L. Murphy, J. Costa, G. Andersen
Introduction to and analysis of great French literary texts. Poetry and prose, appreciation. Oral and written composition. A language and literature survey course for students who have obtained high marks in their High School Certificate or have had some ten years in a French school.
Three hours per week for two terms.

200 Language. M. Pavitt
Functional grammar, conversation and composition. A lecture and laboratory course. Prerequisite : French 100.
Three hours per week for two terms.

220 Language. G. Andersen & Staff
Continued emphasis on spoken French. Corrective phonetics, grammar, composition and selected readings. A lecture and part-time laboratory course. Prerequisite : French 120 or an equivalent in the Departmental test.
Three hours per week for two terms.

224 Language. Staff
Review grammar and corrective phonetics during the first semester Short contemporary readings illustrating French life with discussion and composition thereon. A lecture course. Prerequisite : French 124 or an equivalent in the Departmental test.
Three hours per week for two terms.

228 Language and Civilization.
M. Langumier, A. Berthiaume
Syntactical drills and idiomatic structures. Expansion of vocabulary by study of word derivation and formation. Oral and written composition through readings and realia of both French and French Canadian civilizations. A lecture and practice course. Prerequisite : French 128 or an equivalent in the Departmental test.
Three hours per week for two terms.

230 Literature of the 18th Century : an Age of Enlightenment. C. Rouben
Thought and sensibility. Prerequisite : French 130 or an equivalent in the Departmental test.
Three hours per week for two terms.
Texts : Lesage, *Gil Blas*; Voltaire, *Lettres philosophiques, Zadig, Le Siècle de Louis XIV, Oeuvres critiques et philosophiques*; Montesquieu, *Les Lettres persanes*; *l'Encyclopédie*; Diderot, *Le Neveu de Rameau*; Buffon, *Pages choisies*; Vauvenar-

gues, *Oeuvres choisies*; Rousseau, *Discours* (Classiques Larousse). Prévost, *Manon Lescaut*; Rousseau, *Confessions* (Collection Garnier).

328 Language. P. Toupin

Stylistics, synonymy, study of idioms, literary composition (prose, poetry and drama). Prerequisite : French 228. A compulsory practice course for students majoring in French.
Three hours per week for two terms.

330 Literature of the 19th Century : French Novel.
A. Lauzière

A lecture and seminar course. Prerequisite : French 230 or exceptionally French 228.
Three hours per week for two terms.
Texts : Châteaubriand, *René*; Constant, *Adolphe*; Vigny, *Cinq-Mars*; Balzac, *Le Père Goriot*; Stendhal, *Le Rouge et le Noir*; Flaubert, *Madame Bovary*; Zola, *Germinal*; Bourget, *Le Disciple*; Huysmans, *A rebours*.

340 Literature of the 19th Century : French Poetry.
M. Andersen

A lecture and seminar course. Prerequisite : French 230 or exceptionally French 228.
Three hours per week for two terms.
Texts : Lamartine, *Les Méditations*; Hugo, *Poésies choisies*; Vigny, *Les Destinées*; Musset, *Poésies choisies*; Nerval, Gautier et le Parnasse; Baudelaire, *Les Fleurs du mal*; Rimbaud, *Le Bateau ivre, Une Saison en enfer*; Verlaine, *Romances sans paroles*; Mallarmé, *l'Après-Midi d'un faune*.

360 Literature : French Canadian letters.
A. Lauzière, A. Berthiaume

A lecture and seminar course. Prerequisite : French 230 or exceptionally French 228.
Three hours per week for two terms.
Texts : Romans : *Les Anciens Canadiens, Le Survenant, Trente Arpents; Bonheur d'occasion; Les Plouffe; Le Gouffre a toujours soif; Poussière sur la ville; Agaguk; Le Libraire.*
Poésie : Ecole de Québec et Ecole de Montréal; Nelligan, Morin; Saint-Denys Garneau, Desrochers, Choquette, Grandbois, Lasnier, Hébert.
Théâtre : Gélinas, Toupin, Dubé et Languirand.

428 Language. (not offered in 1965-66)
History of the French language. Introduction to linguistics. Exercises in literary and oratory art (composition, reading, analysis, discussion). Prerequisite : French 328. A compulsory course for students majoring in French.
Three hours per week for two terms.

430 Literature : the French novel of the 20th Century.

A lecture and seminar course. Prerequisite : French 330, 328, 340 or 360.
Three hours per week for two terms.
Texts : Proust, *Du Côté de chez Swann*; Fournier, *Le grand Meaulnes*; Gide, *La Porte étroite*; le roman-fleuve; Mauriac, *Thérèse Desqueyroux*; Malraux, *La Condition Humaine*; Bernanos, *Journal d'un curé de campagne*; Green, *Moïra*; Camus, *L'Etranger*; le nouveau roman.

450 Literature : great plays of the French theatre. P. Toupin
A lecture and seminar course. Prerequisite : French 330, 328, 340 or 360.
Three hours per week for two terms.
Texts : Corneille, *Le Cid*; Molière, *Le Misanthrope* : Racine, *Phèdre*; Marivaux, *Le Jeu de l'amour et du hasard*; Beaumarchais, *Le Mariage de Figaro*; Hugo, *Hernani*; Musset, *Il ne faut jurer de rien*; Rostand, *Cyrano de Bergerac*; Claudel, *l'Annonce faite à Marie*; Montherlant, *La Reine morte*; Giraudoux, *La Guerre de Troie n'aura pas lieu*; Sartre, *Huis-clos*; Genêt, *Haute surveillance*; Ionesco, *La Leçon*.

470 Civilization and Culture. A. Lauzière, M. Langumier
Trends and evolution : France and French Canada. A lecture (half) course. An elective for third or fourth year Commerce students. Prerequisites : French 230 or any third or fourth year French course.

A lecture course 3 hrs. per week for two terms.

Courses leading to a B.A. with a Major in French.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Classics 102 or 121	Classics 202, 221 or 222	FRENCH Electives (2) from 330, 340 or 360	FRENCH 428 FRENCH 430 FRENCH 450
English 101	English		Philosophy
FRENCH 120, 124, 128 or 130	FRENCH 220, 224, 228 or 230	FRENCH 328	Elective (1)
Mathematics 101	Philosophy	Philosophy	
Theology 101	Theology	Theology	
Elective (1)	Elective (1)		

geotechnical science

D. J. McDougall Associate Professor (Chairman)
(on leave of absence) A. S. Yalcin Associate Professor
H. J. Bergmann Lecturer
P. J. Denison Lecturer

201 Introduction to Geologic Mapping. Half Course. Staff
Students are introduced to the use of transits, levels, compass, air photos, etc. Some elementary concepts of map making and descriptive Geometry are studied, and simple outcrop maps are constructed from notes obtained in the field.
This is a second year course which is normally taken in the spring at the end of the first year.
Two week field school in May.

202 General Geology. Half Course.
Elements of mineralogy, petrology, soil mechanics, structural geology, historical geology and geomorphology. Emphasis is laid on the relationship of geology to engineering practice. Mineral, rock and soil specimens, topographic and geologic, maps, and air photos are studied in the laboratory. During October several field trips are made to points of interest in and near Montreal.
Lectures : 3 hours per week for first term.
Lab. : 3 hours per week for first term.
Text : Dapples, *Basic Geology for Science and Engineering.* Wiley.

300 Geology for Engineers. Full Course.

The first term consists of a study of general Geology (202) and the second term covers a more detailed examination of Engineering Geology (402).
Lectures : 3 hours per week for first term.
Lectures : 3 hours per week for first terms.
Lectures : 2 hours per week for second term.
Laboratory : 3 hours per week for first term.
Laboratory : 2 hours per week for second term.

302 Determinative Mineralogy. Full Course. D. J. McDougall

The identification of Minerals by physical, chemical and optical means. The first part of the course is concerned with the description and identification of some 150 minerals by physical and chemical means. Subsequently the optical properties of non-opaque minerals are studied with the use of petrographic microscope. Where time permits students are introduced to the use of the reflecting microscope for the study of opaque minerals.
Lectures : 2 hours per week for two terms.
Laboratory : 3 hours per week for two terms.
Text : Berry and Mason, *Mineralogy*. Freeman.

303 Applied Geophysics. Half Course. H. J. Bergmann

An introduction to geophysical methods of prospecting and of investigating subsurface structures. The theories, uses and limitations of various magnetic, electrical, gravitational and seismic methods are explained and compared. The practical operation of the instruments is reviewed and actual field results are obtained and analysed.
Prerequisite : Geotechnical Science 202.
Lectures : 2 hours per week for one term.
Texts : Eve and Keys, *Applied Geophysics*. Cambridge. Dobrin, *Introduction to Geophysical Prospecting*. McGraw-Hill.

304 Field Geophysics. Half Course.

Field work involving small scale seismic, magnetic, gravimetric and electrical surveys.
Prerequisite : Geotechnical Science 303.
Field Work : 2 weeks in May at the McGill Geophysics Field School.

305 Structural Geology. Half Course D. J. McDougall

A survey of geological structures and their origins. Elements of structural interpretation. In the laboratory, graphical methods are used for the analysis and interpretation of practical problems.
Prerequisite : Geotechnical Science 202, 306.
Lectures : 2 hours per week for one term.
Lab. : 3 hours per week for one term.
Text : Billings, *Structural Geology*. 2nd ed., Prentice-Hall.

306 Geotechnical Methods. Half Course. D. J. McDougall

A survey of field and laboratory methods and techniques which is designed as an introduction to the philosophy and practice of geotechnical investigations. Interested students will take this course in the term following Geotechnical Science 202.
Lectures : 2 hours per week for second term.
Lab. : 2 hours per week for second term.

307 Meteorology. Full Course. P. J. Denison

Composition of atmosphere; solar and terrestrial radiation; heat balance; general circulation and climatic zones; dynamics of the atmosphere; fronts and air masses; extra-tropical cyclones; jet streams; cloud and precipitation physics; atmospheric electricity; severe storms; physical climatology; meteorological instruments.

Hydrometeorology

The hydrological cycle; evaporation and transpiration; run off; ground water; floods; lake and river ice; snow melt.

Oceanography

Properties of sea water; air sea interchanges; sea ice; wind waves; storm surges; ocean currents and temperature; maritime climates.

Air Pollution

Nature and sources of air contaminants; stability of air masses; turbulence and diffusion; smoke plumes.

401 Geomorphology. Half Course. D. J. McDougall

An advanced course in the study of landforms produced by the processes of erosion and deposition by water, wind, glaciation and earth movements. The interrelationship of geologic processes, materials and structures, soil types, climatic conditions, etc., in the development of topographic forms is emphasised. Suites of maps and air photos plus one full day field trip are used to illustrate the lectures.
Prerequisite : Geology 202 or 300.
Lectures : 2 hours per week for first term.
Lab. : 2 hours per week for first term.
Text : Thornbury, *Principles of Geomorphology*. Wiley.

402 Engineering Geology. Half Course.

Engineering properties of rocks. Ground water. The formation and mechanics of soils including structure, gradation, sedimentation, permeability, compressibility and shearing strength. Application of soil characteristics to typical geotechnical problems in bearing capacity, settlement and lateral earth pressure. Crustal movements and stability of slopes. Frost action in regolith. Laboratory work for experimental determination of above characteristics.
Prerequisite : Geotechnical Science 202.
Lectures : 2 hours per week for second term.
Lab. : 2 hours per week for second term.
Text : Krynine and Judd, *Principles of Engineering Geology and Geotechnics*. Mc-Graw-Hill.

403 Field Geology (McGill Geology 231c.). Half Course.

Surface and underground field mapping methods. Preparation of geological maps, sections and reports from field notes, diagrams, air photos, etc.
Prerequisite : Geotechnical Science 202, 305, 406.
Field Work : 2 weeks in May at the McGill Field Geology School.
Texts : Lahee, *Field Geology*. 5th ed., McGraw-Hill. McKinstry, *Mining Geology*. Prentice-Hall.

404 Crystallography. Half Course. Not given in 1965-66.
The detailed investigation of the crystal classes with emphasis on their internal structure. Introduction to X-Ray Crystallography.

405 Geology and Mineral Resources of Canada. Not given in 1965-66. Half Course.　　　　　D. J. McDougall
The geology and mineral resources of Canada are described in relationship to the major geomorphic subdivisions. Reading assignments and colloquium are used to provide illustrative material.
Lectures : 2 hours per week for one term.
Colloquium : 1 to 3 hours per week for one term.
Text : *Geology and Economic Minerals of Canada*. 4th ed., Econ. Geol. Series, No 1 of the *Geological Survey of Canada*.

406 Petrology. Full Course.　　　　　D. J. McDougall
A systematic survey of the origin, distribution, classification and identification of the common igneous, sedimentary, and metamorphic rocks. In the laboratory megascopic and microscopic properties are studied, using field techniques and the polarizing microscope.
Prerequisite : Geotechnical Science 302, 306.
Lectures : 2 hours per week for two terms.
Lab : 3 hours per week for two terms.
Texts : Tyrrell, *The Principles of Petrology*. Methuen. Moorhouse, *The Study of Rocks in Thin Section*. Harper.

407 Economic Mineral Deposits. Full Course.
　　　　　D. J. McDougall
The origins, types of occurrence and classification of deposits of important metallic and non-metallic minerals of economic importance.
Prerequisite : Geotechnical Science 305, 406.
Lectures : 2 hours per week for two terms.
Lab : 3 hours per week for two terms.

408 Geotechnical Laboratory. Full Course.　　　　　Staff

409 Applied Sedimentation. Half Course.
The formation and investigation of consolidated and unconsolidated sedimentary rocks. Particular emphasis is placed on engineering aspects.
Lectures : 2 hours per week for one term.
Lab : 3 hours per week for one term.

In the Fourth year qualified students may be permitted to take up to two additional full courses in Chemistry, Engineering, Mathematics or Physics.
A course of scientific German is recommended for those contemplating graduate studies. It is strongly recommended that prior to graduation at least one summer be spent in some phase of Geotechnical investigation. In the syllabus of courses those marked with an asterisk may be taken in a later year.

Courses leading to a B.Sc. with a Major in Geotechnical Science.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Chemistry 101	Chemistry 211	Chemistry 231	Engineering 422
Chemistry 102	Chemistry 212	Engineering 103	GEOTECH.Sc. 401
Engineering 121 *	English	Engineering 322	GEOTECH.Sc. 402
French	GEOTECH.Sc. 202	GEOTECH.Sc. 305	GEOTECH.Sc. 405
GEOTECH.Sc. 201 *	(301)	GEOTECH.Sc. 307	GEOTECH.Sc. 406
Mathematics 106	GEOTECH.Sc. 302	GEOTECH.Sc. 403 *	GEOTECH.Sc. 407
Mathematics 107	GEOTECH.Sc. 303	GEOTECH.Sc. 404	GEOTECH.Sc. 408
and 108 or 205	GEOTECH.Sc. 304 *	Philosophy	GEOTECH.Sc. 409
Physics 101	GEOTECH.Sc. 306	Physics 205	Philosophy or
Theology 101	Mathematics 205		Theology
	Philosophy		
	Theology		

*This course may be taken in a later year.

history

F. G. W. Adams Associate Professor (Chairman)
Rev. C. B. O'Keefe, S.J. Associate Professor
R. T. Coolidge Assistant Professor
Rev. J. Monet, S.J. Sessional Lecturer
D. C. Savage Associate Professor
J. T. Copp Assistant Professor
(on leave from Dept.) J. F. McGovern Assistant Professor
D. J. O'Brien Assistant Professor
R. E. Ruigh Assistant Professor
C. Schlacks, Jr. Assistant-Professor

101 The Heritage of Western Civilization, 1200-1815. Full Course.　　　　　R. E. Ruigh, C. Schlacks
A survey of the institutional and cultural background of modern Europe and America.
Lectures and Seminar : 3 hours per week for two terms.

201 History of Canada. Full Course.　　　　　J. T. Copp
A general survey of Canadian history from the establishment of New France to the Second World War, with special emphasis on 19th-century political and constitutional development.
Lectures : 3 hours per week for two terms.

202 History of Modern Europe, 1760-1919. Full Course.
　　　　　F. G. W. Adams
A general survey of the main political, socio-economic and cultural developments in Europe from the Enlightenment to the Treaty of Versailles.
Lectures : 3 hours per week for two terms.

203 Introduction to the History of Africa. Full Course.
　　　　　D. C. Savage
Africa before European colonization; colonial policies of the European powers; the rise of nationalism.
Lectures : 3 hours per week for two terms.

204 History of Ancient Greece and Rome. Full Course.
D. C. Scavone
This course is also listed as Classics 330. For description, see Classics.
Lectures : 3 hours per week for two terms.

205 The World since 1914. Full Course. F. G. W. Adams
A survey of international politics from 1914 to the present, with special emphasis on European developments.
Lectures : 3 hours per week for two terms.

301 History of England. Full Course. (not offered in 1965-66)

302 History of the United States. Full Course. D. J. O'Brien
A survey of American history from colonial times to the present.
Lectures : 3 hours per week for two terms.

303 History of the British Empire and Commonwealth. Full Course. J. T. Copp
A survey of the development of the British Empire and its transformation into the Commonwealth of Nations.
Lectures : 3 hours per week for two terms.

305 History of Medieval Europe. Full Course. R. T. Coolidge
A survey of the main events of medieval history, and of the institutions and peoples which have helped to shape western civilization.
Lectures : 3 hours per week for two terms.

306 History of Russia. Full Course. C. Schlacks, Jr.
A survey of Russian history from the beginnings to the present time.
Lectures : 3 hours per week for two terms.

311H Renaissance and Reformation. Full Course. (not offered in 1965-66.

312H The Age of the Enlightenment. Full Course.
F. G. W. Adams
A study of European ideas and institutions from about 1660 to 1789, with special emphasis on France. Students will be required to read selections in French.
Seminar : 2 hours per week for two terms.

314H History of Tudor-Stuart England. Full Course.
R. E. Ruigh.
A study of the rise of the new monarchy and the economic, political and religious developments of the period.
Seminar : 2 hours per week for two terms.

315H Problems in Contemporary Africa. Full Course.
D. C. Savage
A study of developments in Africa since World War II, emphasising the origins of nationalism, and the problems of unity.
Seminar : 2 hours per week for two terms.

316H Medieval France. Full Course. (not offered in 1965-66) –

317H The French Revolution and Napoleon. Full Course (not offered in 1965-66)

318H History of East, Central and South Africa. Full Course. (not offered in 1965-66)

319H Post-Confederation Canada. Full Course. J. T. Copp
A study of selected topics in the history of Canada since 1867.
Seminar : 2 hours per week for two terms.

401 History of Medieval Italy. Full Course. (not offered in 1965-66)

402 The Middle East. Full Course. H. Habib
A brief historical and political survey of the institutions of the Middle Eastern states. This course, given by the Political Science department, is also listed as Political Science 217.
Lectures : 3 hours per week for two terms.

403 Modern Catholic Social and Political Thought. Full Course. D. J. O'Brien
A study of the attitude of the Church and of individual Catholics in the face of the political and social developments of nineteenth and twentieth century Europe and America.
Lectures : 3 hours per week for two terms.

404 English Constitutional History. Full Course. R. E. Ruigh
The theory and practice of the English Constitution from Magna Charta to the present.
Lectures : 3 hours per week for two terms.

411H Church and State in the Middle Ages. Full Course.
R. T. Coolidge
A study of selected incidents, situations, issues and concepts which illustrate the development of spiritual and temporal authority and show the harmony, tension and conflict involved in the relations between them. Students will be required to read selections in French.
Seminar : 2 hours per week for two terms.

412H British Political Parties, 1815-1950. Full Course.
D. C. Savage
Emphasis is placed on the structure of politics and on the role of political parties in modern industrial England.
Seminar : 2 hours per week for two terms.

414H Seventeenth-Century France. Full Course.
C. B. O'Keefe, S.J.
A study of the political, social, economic, religious and intellectual developments in France, with special emphasis on the reign of Louis XIV.
Seminar : 2 hours per week for two terms.

415H The Era of the Governing Class : English History 1660-1815. Full Course. (not offered in 1965-66)

416H Russian Intellectual History, 1790-1890. Full Course.

C. Schlacks, Jr.

A study of Russian intellectual history in the nineteenth century, with special emphasis on Populism.
Seminar : 2 hours per week for two terms.

417H Medieval Economic History. Full Course. (not offered in 1965-66).

418H American Reform Movements, 1890-1945. Full Course. (not offered in 1965-66)

419H French Canada since Confederation. Full Course. (not offered in 1965-66)

420H American Intellectual History. Full Course.

D. J. O'Brien

A study of selected problems in the history of American social, political and religious thought.
Seminar : 2 hours per week for two terms.

421 Philosophy of History. Full Course.

A course in the philosophy of history is offered by the Philosophy Department. See listing under Philosophy.

An Honours B.A. in History is available to students. Those intending to qualify for this degree must, during their four-year programme, take at least four General History courses and six Honours History courses. Five of these ten history courses must be taken in one of the following areas of concentration : European, North American, British, or non-European history. Students entering their second year in the Honours programme will be assigned a faculty advisor from the Department with whom they should consult concerning their selection of courses. There is a comprehensive oral examination for all Honours History students towards the end of their fourth year.

Courses leading to an Honours B.A. in History :

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Classics 102 or 121	French	HISTORY	HISTORY
English 101	HISTORY	Electives (3)	Electives (3)
French	Electives (3)	Philosophy	Philosophy
HISTORY 101	Philosophy	Theology	
Mathematics 101	Theology	Elective (1)	
Theology 101			

Candidates for the B.A. degree with a Major in History must take at least six General History courses. Upon entering their second year, Majors in History will be assigned a faculty advisor from the Department, with whom they should consult concerning the selection of their courses.

Courses leading to a B.A. with a Major in History :

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Classics 102 or 121	Classics 202,	HISTORY Electives :	HISTORY Electives :
English 101	221 or 222	2 of 301, 302,	2 of 401, 402,
HISTORY 101	English	303, 304, 305	403 and 404
Mathematics 101	French	and 306	Philosophy
Theology 101	HISTORY 201, 202,	Philosophy	Electives (2)
French	203, 204 or 205	Theology	
	Philosophy	Elective (1)	
	Theology		

mathematics

Rev. E. O'Connor, S.J. Professor (Chairman)
I. Benjamin   Associate Professor
A. Prillo   Associate Professor
K. N. Majumdar   Assistant Professor
T. Srivastava   Assistant Professor
D. A. Bonyun   Lecturer
C. G. Hewson   Lecturer
J. C. Soric   Lecturer
H. Fainsilber   Lecturer
Rev. J. G. McDonough, S.J.   Lecturer

101 Algebra and Trigonometry. Full Course.   Staff

Algebra and Graphs : linear and quadratic functions and their graphs; ratio and proportion; the progressions; permutations and combinations; binomial theorem; mathematics of investment.

Plane Trigonometry and Analytic Geometry : the trigonometric functions and solution of right-angled triangles, measurement of angles; identical relationships among the functions; trigonometric equations; graphs of the trigonometric functions; solution of triangles; logarithms; discussion of straight line and circle.

Lectures : 3 hours per week for two terms.

106 Analytic Geometry. Half Course.

An elementary study of the straight line and circle, with an introduction to conic sections.

Lectures : 3 hours per week for one term.

Text : Smith, Salkover and Justice, *Analytic Geometry*. Wiley.

107 Plane Trigonometry. Half Course.

The trigonometric functions and solution of right-angled triangles; measurement of angles; identical relations among the functions and trigonometric equations; functions of compound angles; transformations of products and sums; logarithms; solution of triangles; graphs of the trigonometric functions; general solutions of trigonometric equations and inverse functions.

Lectures : 3 hours per week for one term.

Text : Hall and Knight, *Elementary Trigonometry*. Macmillan.

108 Intermediate Algebra. Half Course.

Linear and quadratic functions; polynomials and algebraic equations; rational functions; ratio and proportion; systems of equations; series of numbers; the progressions; permutations and combinations; mathematical induction; the binomial theorem; approximations; mathematics of investment.

Lectures : 3 hours per week for one term.

Text : Rosenbach and Whitman, *College Algebra*. Ginn.

109 Senior Algebra. Half Course.

Functions; inequalities and their solutions; complex numbers; theory of equations; logarithms; determinants; partial fractions; infinite series.

Lectures : 3 hours per week for one term.

Text : Rosenbach and Whitman, *College Algebra*. Ginn.

110 Analytical Geometry and Calculus. Full Course.

A first course in Analytical Geometry and Calculus.

Lectures : 3 hours per week for two terms.

202 Elementary Statistics. Half Course.

Frequency distributions and descriptive measures; probability; sampling; estimation of confidence intervals; testing hypothesis; tests for randomness; linear relations; correlations.

Lectures : 3 hours per week for one term.

Text : Freund, *Modern Elementary Statistics*. Prentice-Hall.

203 Theory of Interest. Half Course.

Simple and compound interest; discounts, annuities certain; sinking funds; bonds; elementary interpolation.

Lectures : 3 hours per week for one term.

Text : Simpson, Pirenian and Crenshaw, *Mathematics of Finance*. Prentice-Hall.

205 Calculus. Full Course.

A first course aiming to cover as completely as possible the ordinary techniques and applications of calculus.

Limits of functions, differentiation and integration of polynomials with applications; second derivative and differentiation of algebraic, exponential and logarithmic functions; curvature; definite integral.
Differentiation and integration of trigonometric functions; methods of integration; improper integrals; applications of the definite integrals; approximate integrals; partial derivatives; multiple integrals; expansion of functions.

Lectures : 3 hours per week for two terms.

Text : Middlemiss, *Differential and Integral Calculus*. McGraw-Hill.

206 Analytic Geometry of Two and Three Dimensions. Half Course.

This course, which begins with conic sections, embraces the chief topics of plane and space geometry that are of common interest to both the science and the engineering student. It in-

cludes the following : the principal properties of the parabola, the ellipse, the hyperbola; coordinate transformations and polar coordinates; method of distinguishing type of conic from its unreduced equation; some *higher* plane curves; parametric equations; cartesian spherical and cylindrical coordinates in space; equations of lines, planes, cylinders, cones, and surfaces of revolution; an introduction to the study of quadric surfaces.

Lectures : 3 hours per week for one term.

Text : Smith, Salkover and Justice, *Analytic Geometry*. Wiley.

208 Algebra. Full Course.

The first part of this course aims at an accurate working familiarity with the following topics : real numbers; decimal approximations; abbreviated methods of computation; inequalities; complex numbers; formal and functional properties of polynomials; polynomial equations; rational functions.

The second part embraces the following topics : solution of cubic and quartic equations by radicals; systems of linear equations; determinants; matrices; linear transformations (projective and complex); symmetric functions of the roots of an equation; approximation of irrational numbers by rationals; impossibility of angle trisection by ruler and compass; sequences; limits; summation of series.

Lectures : 3 hours per week for two terms.

Text : Courant and Robbins, *What is Mathematics?* Oxford.

209 Algebra. Half Course.

This course is comprised of topics in Algebra. It is a combination of Mathematics 109 and 307.

Lectures : 2 hours per week for two terms.

210 Analytical Geometry and Calculus. Full Course.

A second course in Analytical Geometry and Calculus.

Lectures : 3 hours per week for two terms.

211 Linear Algebra. Half Course.

Vector spaces; Euclidean n-space; determinants; linear transformations and matrices; bilinear and quadratic forms; characteristic values and vectors of linear transformations; similarity of matrices.

Lectures : 2 hours per week for two terms.

214 Algebra and Calculus. Full Course.

An introductory course aiming to cover the ordinary techniques and applications of calculus. The course will include topics in Algebra and elementary differential equations.

Lectures : 3 hours per week for two terms.

307 Algebra and Spherical Trigonometry. Half Course.

This course comprises a practical treatment of spherical trigonometry and of the topics of algebra which are necessary for the study of differential equations and are not adequately treated in Mathematics 109.

Lectures : 3 hours per week for one term.

Texts : Hart and Hart, *Solid Geometry and Spherical Trigonometry*. Heath. Sokolnikoff, *Higher Mathematics for Engineers and Physicists*. McGraw-Hill.

308 Advanced Calculus. Half Course.

Limits and continuity of a function of two variables; partial differention; multiple and line integrals; infinite series; fourier series; improper integrals and Gamma functions.

Lectures : 2 hours per week for two terms.

Text : Sokolnikoff, *Higher Mathematics for Engineers and Physicists*. McGraw-Hill.

309 Ordinary Differential Equations. Half Course.

Equations of first order and first degree; first order equations of degree higher than the first, singular solutions; linear equations with constant cœfficients; solving of equations by Laplace Transforms; Equations of order higher than the first; Existence Theorems and applications; solution by series; numerical solutions.

Lectures : 2 hours per week for two terms.

Text : Kells, *Elementary Differential Equations*. McGraw-Hill.

311 Real and Complex Analysis. Full Course.

Infinite Series and Integrals : a study of the infinite processes used in applied mathematics, with a view to securing an effective manipulation.

Functions of a Complex Variable. A first course.

Lectures : 3 hours per week for two terms.

Text : Knopp, *Theory of Functions*. Part 1. Dover.

318 Advanced Calculus. Full Course.

Limits and continuity of a function of two variables; partial differention; multiple and line integrals; infinite series; fourier series; improper integrals and Gamma functions; complex variable.

Lecturers : 3 hours per week for two terms.

Text : Sokolnikoff, *Higher Mathematics for Engineers and Physicists*. McGraw-Hill.

319 Differential Equations. Full Course.

Equations of first order and first degree; first-order equations of degree higher than the first, singular solutions; linear equations with constant cœfficients; solving of equations by Laplace Transforms; equations of order higher than the first; Existence Theorems and applications; solution by series; numerical solutions; partial differential equations.

Lectures : 3 hours per week for two terms.

Text : Kells, *Elementary Differential Equations*. McGraw-Hill.

412 Real and Complex Analysis. Full Course.

A continuation of Mathematics 311. Functions of a Real Variable; Functions of a Complex Variable.

Lectures : 3 hours per week for two terms.

Texts : Titchmarsh, *The Theory of Functions*. Oxford. Knopp, *Theory of Functions*. Part II. Dover.

414 Problems of Advanced Calculus. Full Course. (not offered in 1965-66)

A series of interesting and difficult mathematical assignments intended to integrate the student's knowledge of algebra, analytic geometry and advanced calculus.

Lectures and Lab : 2 hours per week for two terms.

415 Modern Algebra. Full Course.

The structure of number systems; integral domains, ordering factorization, fields, continuity, algebraic closures; groups, vector spaces; matrices and linear groups; algebra of classes; transfinite arithmetic; algebraic number fields; Galois theory.

Lectures : 3 hours per week for two terms.

Text : Birkoff and MacLane, *A Survey of Modern Algebra*. Macmillan.

416 Number Theory. Full Course.

An introduction to the problems and methods of elementary and analytic number theory.

Lectures : 3 hours per week for two terms.

417 History of Mathematics. Half Course. (not offered in 1965-66)

Lectures : 1 hour per week for two terms.

418 Numerical Analysis. Full Course.

Lectures : 3 hours per week for two terms.

Courses leading to an Honours B.Sc. in Mathematics.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Chemistry 101	MATHEMATICS 208	MATHEMATICS 311	English
Chemistry 102	MATHEMATICS 211	MATHEMATICS 415	MATHEMATICS 412
French	MATHEMATICS 318	Philosophy	MATHEMATICS 416
MATHEMATICS 106	MATHEMATICS 319	Physics 311	MATHEMATICS 418
MATHEMATICS 205	Philosophy	Elective	Philosophy
MATHEMATICS 206	Physics 205		or Theology
Physics 101	Theology		
Theology 101			
or 115			

Courses leading to a B.Sc with a Major in Mathematics.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Chemistry 101	MATHEMATICS 208	MATHEMATICS 318	English
Chemistry 102	MATHEMATICS 209	MATHEMATICS 319	MATHEMATICS 311
French	MATHEMATICS 211	Philosophy	MATHEMATICS 415
MATHEMATICS 107	MATHEMATICS 205	Physics 311	Philosophy
and 108, or 205	Philosophy	Elective	or Theology
MATHEMATICS 106	Physics 205		Elective
MATHEMATICS 206	Theology		
Physics 101			
Theology			

modern languages

A. E. Lauzière Professor (Acting Chairman Pro-Tem)
Rev. Sr. Maria Anastasia, O.S.B., Lecturer

german

100 Full Course.
An introductory course for students with no previous knowledge of German.
Lang. lab : 2 hours/week 2 terms.
Lectures 3 hrs. per week for two terms.

200 Intermediate German.
Grammar review; practice in conversation; composition, readings from contemporary German authors.

spanish

100 Functional Spanish. Full Course.
Essentials of pronunciation and grammar; composition, graded reading of Spanish texts. For students with no previous knowledge of Spanish.
Lectures : 3 hours per week for two terms. Language Lab. : 2 hours per week for two terms.
Text : *Modern Spanish*. A project of the Modern Language Association. Harcourt-Brace.

200 Intermediate Spanish. Full Course.
Grammar review; practice in conversation composition; selections from the writings of the 19th and 20th centuries introducing the student to the literature and the civilization of Spain and of Spanish America.
Lectures : 3 hours per week for two terms. Language Lab. : 1 hour per week for two terms.

320 Full Course.
Contemporary literature. Advanced composition and conversation.
Lectures : 3 hours per week for two terms.

330 Survey of Spanish Literature. Full Course. (not offered in 1965-66)
A chronical consideration of Spanish writers from the *Poema de mio Cid* to the post-war period.
Lectures : 3 hours per week for two terms.

340 Literature of the Golden Age. Full Course. (not offered in 1965-66)
Lectures : 3 hours per week for two terms.

370 Advanced stylistics and phonetics. Full Course. (not offered in 1965-66)
Lectures : 3 hours per week for two terms.

420 Literature of the Nineteenth century. Full Course. (not offered in 1965-66)
Lectures : 3 hours per week for two terms.

430 Twentieth-century literature in Spain. Full Course. (not offered in 1965-66)
From the Generation of '98 to the present day.
Lectures : 3 hours per week for two terms.

440 Latin American literature. Full Course. (not offered in 1965-66)
From the colonization period to the present day, with particular emphasis on 20th-century authors.
Lectures : 3 hours per week for two terms.

450 Cervantes. Full Course. (not offered in 1965-66)
Lectures : 3 hours per week for two terms.

460 Old Spanish language and literature. Full Course. (not offered in 1965-66)
Readings in medieval texts.
Lectures : 3 hours per week for two terms.

Note : Unless there is a sufficient number of applicants, the advanced courses will not be offered this year. Interested students should consult the Department before registration.

Courses leading to a B.A. with a Major in Spanish.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Classics 102 or 121	Classics 202, 221 or 222	SPANISH Electives (2) from 320,	SPANISH Electives (2) from 420, 430
English 101	English	330 or 340	440, 450 or 460
French 120, 124, 128 or 130	French 220, 224, 228 or 230	Philosophy	Philosophy
Mathematics 101	Philosophy	Theology	Elective (1)
SPANISH 100	SPANISH 200	Elective (1)	
Theology 101	Theology Elective (1)		

music

G. Allaire Assistant Professor

101 History and Literature of Music. Full Course.
A course designed to acquaint the student with the style, the most important musical forms and representative masterpieces of the different periods of the history of music from the Middle Ages to Modern Times.
Lectures : 3 hours per week for two terms.
Text : Machlis, *The Enjoyment of Music,* (Norton).
This course is available to Upper Classmen as an elective.

philosophy

J. P. Doyle Assistant-Professor (Chairman)
R. Becka Associate Professor
R. C. Hinners Associate Professor
A. S. Kawczak Associate Professor
E. J. Roesch Associate Professor
W. J. Arnold Assistant Professor
H. H. Lau Assistant Professor
J. G. McGraw Assistant Professor
J. D. Morgan Assistant Professor
M. F. Reidy Assistant Professor
D. Clark Lecturer

200 Introduction to philosophy Staff

Third year level courses open to Arts Students :

310 Philosophy of nature.

311 Philosophy of man. J. D. Morgan

312 Philosophy of human knowledge. H. H. Lau

313 Ethics : questions in the classical philosophy of morals.
W. J. Arnold

314 Ethics : a consideration of principles underlying moral evaluation with reference to classical and other positions. J. P. Doyle

315 Philosophy of God : the question of natural knowledge of God and the problems attendant upon it.
J. G. McGraw

Third year level courses open to students in Commerce, Engineering and Science :

320 Philosophy of Man. J. G. McGraw

321 Philosophical Psychology. R. Becka

322 Questions in Epistemology : the nature and scope of human knowing. H. H. Lau

323 Philosophy of Human conduct. The principles of morality. J. .P. Doyle

324 Ethics : questions in the moral evaluation of human conduct. J. D. Morgan

325 Philosophy and Religion : relationships and reciprocal influences between philosophical reason and religion.
R. C. Hinners

Fourth year level courses open to Arts students :

410 Philosophy of History. W. J. Arnold

411 The Greek Background of Western Philosophy.
M. F. Reidy

412 The Mediaeval Period.

413 The Classical Modern Period. E. J. Roesch

414 Some Contemporary Philosophical Movements.
A. S. Kawczak

Courses open to Fourth year students in Commerce, Engineering, and Science :

420 Philosophy of man and nature. R. C. Hinners

421 Political Philosophy. R. Becka

422 Logic and Scientific Method. A. S. Kawczak

Courses required of Third and Fourth year students majoring in philosophy :

513 Seminar : an intensive consideration of some classical texts. M. F. Reidy

514 Seminar : a comparative study of selected topics in Aquinas and representative Moderns. E. J. Roesch

Courses leading to a B.A. with a major in Philosophy.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Classics 102 or 121	Classics 202 or 221 or 222	History Elective	History Elective
English	English	PHILOSOPHY Elective	PHILOSOPHY Elective
French	French	PHILOSOPHY Seminars (2)	PHILOSOPHY Seminars (2)
History 101	Philosophy	Theology	Political Science
Mathematics 101	Political Science 201		Elective
Theology 101	Theology		

physics

Rev. H. MacPhee, S.J. Professor (Chairman)
S. N. Bagchi, Professor
C. E. Eappen, Assistant Professor
S. Santhanam Assistant Professor
L. C. Smith Assistant Professor
E. A. MacPhee, Lecturer

101 General College Physics. Full Course.
An introductory course on the elements of mechanics, sound, heat, electricity and light.
Lectures : 3 hours per week for two terms.
Lab. : 1 period per week for two terms.
Textbook : *College Physics* by Sears and Zemansky. (Addison-Wesley)

205 Electricity and Magnetism. Full Course.
Electrostatic field, capacitance, dielectrics, direct current circuits, thermoelectricity, magnetic fields, electromagnetic induction, alternating current circuits, Maxwell's equations.
Lectures : Three hours per week for two terms.
Laboratory : One period per week for two terms.
Textbook : *Fundamentals of Electricity and Magnetism* by Arthur Kip. (McGraw-Hill)

220 Methods of Mathematical Physics I. Full Course.

Elementary linear algebra from the standpoint of physics: Algebra of complex numbers; systems of simultaneous linear equations; determinants and matrices; vector algebra; transformation of coordinates; vector analysis, tensors of second rank; quadratic forms; polynomials.

Lectures : Two hours per week for two terms.

Problems : One period per week for two terms.

Recommended Books : *Linear Algebra* by G. Hadley (Addison-Wesley) *Linear Algebra* by P. C. Shields (Addison-Wesley) *Vector Analysis* by Phillips (Wiley) *Vector Analysis* (Schaum's series); *Matrices* (Schaum's series).

304 Thermodynamics. Half Course.

An introductory course in thermodynamics and kinetic theory. It includes the first and second laws of thermodynamics with ample applications and introduces the Helmholtz and Gibbs functions.

Lectures : Three hours per week first term.

Textbook : *Introduction to Thermodynamics* by Sears (Addison-Wesley).

305 Thermodynamics and Statistical Mechanics. Full Course.

The first half is Physics 304; the second half is classical and quantum statistics with applications.

Lectures : Three hours per week for two terms.

306 Modern Physics and Introduction to Quantum Mechanics. Full Course.

Relativity, the classical experiments and theories of thermal radiation, electrons, photon interactions, atomic models and spectra. The Bohr atom and the old quantum mechanics. Solutions to Schrodinger's equation for barriers, well potentials, harmonic oscillator and one-electron atoms. Perturbation theory, magnetic moments, spin, identical particles, multi-electron atoms, molecules, X-rays.

Lectures : Three hours per week for two terms.

Laboratory : One period per week for two terms.

Textbook : *Fundamentals of Modern Physics* by Eisberg.

307 Electronic Circuits. Full Course.

Introduction to semi-conductor theory, power supplies, transistor and tube biasing, frequency response of a-c linear amplifiers, a-c analyses of various circuit configurations, feedback, non-linear devices.

Lectures : Three hours per week, for all, first term; two hours per week for honour students and one-hour per week for physics majors second term.

Laboratory : One period per week for two terms. .

Textbook : *Electronic Engineering* by Alley and Atwood. (Wiley)

310 Introduction to Theoretical Mechanics. Full Course.

Fundamental principles, statics of a particle and of a rigid body, work and energy, gravitation, principle of virtual work, a particle in a uniform force field, harmonic oscillator, motion of a system of particles, plane motion of a rigid body, central force fields, motion of a particle in an accelerated reference frame, motion under constraints, motion of a rigid body about a fixed point.

Lectures : Three hours per week for two terms.

Textbook : *Mechanics* by K. R. Symon (Addison-Wesley).

311 Theoretical Mechanics. Full Course.

A course treating most of the Topics of Physics 310 and 410 but with simpler applications.

Lectures : Three hours per week for two terms.

Textbook : To be chosen.

320 Methods of Mathematical Physics II. Full Course.

Calculus of variations; techniques for the solution of partial differential equations of physics with applications to : vibration of a string, vibration of a membrane, wave equation for sound and electro-magnetic waves, the potential equation, equations for heat conduction and diffusion; orthogonal series; Sturm-Liouville problems; elementary properties of Legendre functions, Spherical harmonics, Bessel functions, functions of Hermite and Laguerre, Dirac's delta function.

Lectures : Three hours per week for two terms.

Textbook : *Boundary and Eigenvalue Problems of Mathematical Physics* by H. Sagan (Wiley).

References : I. N. Sneddon : *Special Functions of Mathematical Physics and Chemistry* (Oliver & Boyd Ltd. Edinburgh). Robert Weinstock : *Calculus of Variations* (McGraw-Hill) George P. Tolstov : *Fourier Series* (Prentice Hall).

401 Optics. Half Course.

Principles of geometric and of physical optics, interference, diffraction, polarization, double-refraction.

Lectures : 3 hours per week for one term.

Textbooks : *Optics* by Morgan (McGraw-Hill). *Physical Optics* by Wood (MacMillan).

403 Electromagnetic Theory. Full Course.

Analysis of electrostatic and electromagnetic field; non-stationary fields and Maxwell's equations; waves in source-free space; electromagnetic radiation, basic relativistic electrodynamics.

Lectures : Three hours per week for two terms.

Textbook : *Classical Electricity and Magnetism* by Panofsky and Phillips (Addison-Wesley).

404 Nuclear Physics. Full Course.

Radioactivity, alpha-particle spectra, beta-particle spectra, positron emission, orbital-electron capture, gamma ray emission. Methods of detecting, identifying and measuring energies of gamma rays and charged particles. Theory of energy loss of charged particles and gamma rays in matter.

Nuclear structure and nuclear models. Nuclear reactions. Neutrons, detection methods, slowing down and diffusion, fission and fusion, the chain reaction, nuclear reactors. Introduction to high energy physics.

Lectures : Three hours per week for two terms.

Laboratory : One period per week for two terms.

References : Irving Kaplan, *Nuclear Physics*, 2nd edition (Addison Wesley). Lapp and Andrews, *Nuclear Radiation Physics*, 3rd edition (Prentice Hall). Preston, *Physics of the Nucleons* (Addison Wesley).

406 Modern Physics. Full Course.

PART I : Special relativity; quantum effects : particle aspects of electro-magnetic radiation, wave aspects of material particles; nuclear atom and Bohr theory; elementary quantum mechanics of atoms. PART 2 : X-ray spectra, radio-activity; nuclear structure; accelerators and detectors; nuclear reactions; molecular and solid-state physics.

Lectures : Three hours per week during first term.

Textbook : *Modern Physics* by Van Name (Prentice Hall).

407 Modern Physics. Half Course.

This is part I of Physics 406, taken during first term.

408 Topics in Contemporary Physics. Full Course.

A selection will be made from the following : Solid state physics, experimental and theoretical; cryogenics; lasers and masers; particle accelerators; experimental nuclear physics including mossbauer effect, nuclear reactors, nuclear magnetic resonance, electron spin resonance, electron paramagnetic resonance; plasma and magnetohydrodynamics; miscellaneous topics such as quasars, high pressure, high vacuum, relativity, acoustics, microwaves, atomic standards, high magnetic fields, optics, electronics.

Lectures : Three hours per week for two terms.

Laboratory : One period per week doing a special laboratory project for experimental physics students, or an equivalent theory problem for theoretical physics students.

410 Theoretical Mechanics. Full Course. (not given in 1965-66)

D'Alembert's principle, variational principles, Lagrange's equations, Hamilton's principles, scattering in central-force field, kinematics of rigid body motion, rigid body equations of motion, special relativity, Hamilton's equations of motion, canonical transformations, Hamilton-Jacobi theory, small oscillations, continuous systems and fields.

Lectures : Three hours per week for two terms.

Textbooks : *Classical Mechanics* by H. Goldstein (Addison-Wesley).

420 Methods of Mathematical Physics III. Full Course.

Introduction to linear operator and Hilbert space; Pfaffian differential forms and equations with applications to thermodynamics; linear partial differential equations of the first order; linear partial differential equations of the second order : hyperbolic, parabolic and elliptic types; Green's function; integral transforms and integral equations.

Lectures : Three hours per week for two terms.

Textbooks : J. H. Dettman : *Mathematical Methods in Physics* I. N. Sneddon : *Partial Differential Equations* (MacGraw Hill).

Recommended : R. V. Churchill : *Operational Methods* (MacGraw Hill). I. N. Sneddon *Fourier Transforms* (MacGraw Hill). B. Friedman : *Principles and Techniques of Applied Mathematics* (Wiley).

Honour and Strong Major Physics Program.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Chemistry 101	Mathematics 318	Philosophy	English
Chemistry 102	Mathematics 319	PHYSICS 305 or 410	PHYSICS 306 or 404
French	Philosophy	PHYSICS 306 or	PHYSICS 403
Mathematics 106	PHYSICS 205	PHYSICS 406	PHYSICS 408
Mathematics 205	PHYSICS 220	PHYSICS 307	PHYSICS 410
Mathematics 206	PHYSICS 310	PHYSICS 320	PHYSICS 401 or 420
PHYSICS 101		PHYSICS 310 or 401	Theology or
Theology 101		Theology	Philosophy

Strong Majors do not take Physics 404, 410 or 420.
Physics Major Program.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Chemistry 101	Chemistry 221	Philosophy	English
Chemistry 102	Chemistry 222	Mathematics 318	PHYSICS 311
French	Mathematics 205	or	PHYSICS 406
Mathematics 106	or 318	Science Elective	Philosophy or
Mathematics 205	Mathematics 209	Mathematics 319	Theology
or 107 and 108	PHYSICS 205	PHYSICS 304	Elective
Mathematics 206	Philosophy	PHYSICS 401	
PHYSICS 101	Theology	PHYSICS 307	
Theology 101			

political science

H. Habib, Assistant Professor (Chairman)
M. Little   Assistant Professor
R. Coyte   Lecturer

201 An Introduction to Political Science. Full Course.

H. Habib

A basic course in the fundamentals and significance of Political Science.

Lectures : 3 hours per week for two terms.

Text : Schultz, *Essentials of Government*. Prentice-Hall.

211 Britain and the Commonwealth. Full Course. (not offered in 1965-66)

Government and Politics of Great Britain, and the nature and future of Commonwealth relations.

Lectures : 3 hours per week for two terms.

Text : Carter-Hertz, *Major Foreign Powers*, Harcourt, Brace and World. Miller, *The Commonwealth in the World Today*. Duckworth.

217 The Middle East. Full Course. (not offered in 1965-66)

Government and Politics of the Middle East. An historical and and political Survey.

Lectures : 3 hours per week for two terms.

Texts : Kirk, *A Short History of the Middle East*. Methuen. Harari, *Government and Politics of the Middle East*. Prentice-Hall.

229 Public Administration. Full Course.
(not offered in 1965-66)

A theoretical study of government management and institutions, based on the Canadian administrative experience and related to Anglo-American comparative practice.

Lectures : 3 hours per week for two terms.

Text : Hodgetts and Corbett, *Canadian Public Administration.* Macmillan.

237 International Law. Full Course. H. Habib

An introduction to International Law.

Lectures : 3 hours per week for two terms.

Text : Whitaker, *Politics and Power*, Harper and Row.

251 Canadian Government. Full Course. M. Little

An institutional and functional analysis of the political process in Canada.

·Prerequisite : Political Science 201 or equivalent.

Lectures : 3 hours per week for two terms.

Text : Dawson, *Government of Canada*, Toronto University Press.

253 An Introduction to Legal Theory and the Canadian Constitution. Full Course.

A systematic inquiry into the sources and principles of law and the Canadian Constitutional system, with special reference to judicial interpretation.

257 American Government. Full Course. R. Coyte

A study of the American Political Institutions.

Prerequisite : Political Science 201 or equivalent.

Lectures : 3 hours per week for two terms.

Text : Burns and Peltason, *Government of the People.* Prentice-Hall.

271 International Politics. Full Course. M. Little

A theoretical analysis of inter-state relations, drawing upon development in the Foreign Policy, Diplomacy and International Organization of the Twentieth Century.

Prerequisite : Political Science 201 or approval of the Department of Political Science.

Lectures : 3 hours per week for two terms.

Text : Morganthau, *Politics Among Nations*, Knopf.

311 Comparative Government. Full Course. H. Habib

A survey of contemporary political systems, forces and problems in Western Europe with special emphasis on France and Germany. The United Kingdom will be considered whenever Political Science 211 is not offered.

Lectures : 3 hours per week for two terms.

Text : Carter-Hertz, *Major Foreign Powers.* Harcourt, Brace and World.

317 Political Theory. Full Course. M. Little

A critical development of political thought from Plato to the present.

Prerequisite : Political Science 201 or approval of the Political Science Department.

Lectures : 3 hours per week for two terms.

Text : Sabine, *A History of Political Theory.* Holt, Rinehart and Winston.

322 Latin American Government. Full Course. (not offered in 1965-66)

Government and Politics of Latin America.

Lectures : 3 hours per week for two terms.

325 African Government and Politics. Full Course.

Colonialism, imperialism, and the rise of nationalism; government and politics of the independent African states.

Lectures : 3 hours per week for two terms.

361 The Soviet Union. Full Course. R. Coyte

Government and Politics of the Soviet Union. Basic theories of Communism; evolution of the Soviet system.

Lectures : 3 hours per week for two terms.

Text : McClosky and Turner, *The Soviet Dictatorship*, McGraw-Hill.

371 Senior Seminar. Full Course. R. Coyte

Workshop in Problems of Political Science. Method of group inquiry used to forward constructive, critical thinking and jointly reached conclusions.

Seminar : 3 hours per week for two terms. Tutor will direct work in first term. Open only to Political Science Seniors.

Courses leading to a B.A. with a Major in Political Science.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Classics 102 or 121	POLITICAL Sc. 201	POLITICAL Sc.	POLITICAL Sc. 317
Economics 102 or History 101	Classics 202 or 221 or 222	Philosophy	POLITICAL Sc. 371
English 101	English	Electives (3)	POLITICAL Sc.
French	French	Theology	Philosophy
Mathematics 101	Philosophy		Elective (1)
Theology 101	Theology		Elective in social science or other approved by Political Science Dept. (1)

A Major in Political Science consists of a minimum of five full courses in the subject, and a Senior Seminar. A student majoring in Political Science must include Political Science 201 and 317 in his program. A student may substitute an economics, or a history course for a Political Science elective with the approval of the Political Science Department.

sociology

J. Kane Visiting Professor

101 An Introduction to Sociology and Social Problems. Full Course. J. Kane

A survey of the basic concepts and theories of sociology as well as an analysis of selected social problems including population, minorities, alcoholism, drug addiction, crime and delinquency, suicide and others.

Lectures : 3 hours per week for two terms.

Text : Kane, *Social Problems : A Situational-Value Approach.* Prentice-Hall.

201. Introduction to Social Psychology. Full Course. J. Kane

A survey of the basic principles of social psychology including an analysis of motives, attitude values, perception and the interaction of individuals and groups.

Lectures : 3 hours per week for two terms.

Text : Newcomb, Turner and Converse, *Social Psychology : The Study of Human Interaction.* Holt, Rinehart and Winston.

theology

Rev. E. O'Brien, S.J. Professor (Chairman)
Rev. C. H. Henkey Associate Professor
Rev. W. Bedard, O.F.M. Assistant Professor
Rev. G. O'Brien, S.J. Assistant Professor
Rev. J. Zalotay Assistant Professor
A. C. Dechene, Jr. Lecturer
Sr. Mary Peter, C.S.M. Lecturer
A. Webster Lecturer
P. Garnet Instructor

Courses in Religious Studies are offered to students who are not Roman Catholic.
Courses in Theological Studies are limited to students who are Roman Catholic.

RELIGIOUS STUDIES

115 Reason and Religion. Full Course. P. Garnet

An analysis of representative approaches, past and present, to the problems of the authentic nature of religion, of the knowledge of God, of the existence of evil, of personal immortality.
Lectures : 2 hours per week for two terms.
Text : Abernethy and Langford, *Philosophy of Religion* (Macmillan).
Further Readings : Bergson, *The Two Sources of Morality and Religion* (Anchor), Kierkegaard, *Fear and Trembling* (Anchor).

215 Literature of the Bible. Full Course. P. Garnet

A literary analysis of the Judaeo-Christian Scriptures.
Lectures : 2 hours per week for two terms.
Texts : *The Complete Bible* (Chicago), Anderson, *Understanding the Old Testament* (Prentice-Hall), Henshaw, *New Testament Literature* (Hodder & Stoughton).
Further Readings : To be announced.

315 Comparative Religion. Full Course. G. O'Brien

A consideration of the basic religious attitudes and postures of primitive man and of the nature and role of religion in his life. An attempt will be made to assess the contribution of the religion of primitive man to the religions of the Ancient Near East and classical Greece and Rome.
Lectures : 2 hours per week for two terms.
Texts : Eliade, *Patterns in Comparative Religion* (Meridian), van der Leeuw, *Religion in Essence and Manifestation*, 2 vols. (Torchbooks).
Further Readings : Eliade, *The Sacred and the Profane* (Torchbook), James, *The Ancient Gods* (Weidenfeld & Nicolson), James, *Sacrifice and Sacrament* (Thames & Hudson), Otto, *The Idea of the Holy* (Galaxy), and others to be announced.

THEOLOGICAL STUDIES

101 Introduction to Theology. Full Course. Staff

The nature and function of Christian theology and the areas to which it traditionally addresses itself.
Lectures : 2 hours per week for two terms.
Texts : *The Complete Bible* (Chicago), and others to be announced.

203 The Faith of the Christian. Full Course.

Approaches to the act of faith in its full human setting; the faith-commitment as understood in various ways in Scripture, in some classic doctrinal statements and in contemporary Christian thought.
Lectures : 2 hours per week for two terms.
Texts : *The Complete Bible* (Chicago), von Balthasar, *Science, Religion and Christianity* (Burns & Oates), Barth, *Dogmatics in Outline* (Torchbook), Kierkegaard, *Fear and Trembling* (Anchor), de Lubac, *Catholicism* (Universe), Pieper, *Belief and Faith* (Pantheon), Tillich, *Dynamics of Faith*, (Torchbook), Vatican Council II, *Constitutions on Ecumenism* and *Revelation* (St. Paul).
Further Readings : Heaney (ed.), *Faith, Reason and the Gospels* (Newman), Herberg (ed.), *The Writings of Martin Buber* (Meridian), MacKenzie, *Faith and History in the Old Testament* (Macmillan), selected periodical literature.

205 Baptism as Rebirth and Resurrection. Full Course. W. Bedard

A survey of these themes in the Pauline and Johannine writings, and as later developed in selected Church Fathers and liturgies. With special reference to Baptism, the Eucharist, and contemporary interpretations of Christian living.
Lectures : 2 hours per week for two terms.
Texts : *The Complete Bible* (Chicago), *The Epistles of St. Clement of Rome and St. Ignatius of Antioch* (Newman), Davis, *The Making of a Christian* (Stagbook).
Further Readings : Durrwell, *The Resurrection* (Stagbook) Pocock, *Lenten Pastoral Letter for 1965* (Register).

207 Second Council of Vatican. Full Course. C. H. Henkey

A study of the theological essence of councils and their meaning in the structure of the Church in the light of the theological and practical problems discussed and decided upon by the present Council. The meaning and need of reforms and development in the historical existence of the Church.

Lectures : 2 hours per week for two terms.

Texts : Jedin, *Ecumenical Councils of the Catholic Church* (Deus), Küng, *Structures of the Church* (Nelson).
Further Readings : Congar, *Vraie et fausse réforme dans l'Eglise*, 1964 edition (Cerf). Henkey (ed.), *Selected Decrees and Acta of Vatican II* (Loyola).

304 Christ, Son of the Father; the Holy Spirit. Full Course.

The doctrine of the Trinity in its relation to the Christian's understanding of himself. Special emphases : Christ as Son: the divine and human communities; eschatology and the Spirit.

Lectures : 2 hours per week for two terms.

Texts : *The Complete Bible* (Chicago), Aquinas, "On the Trinity," *Summa Theologiae* (Loyola), von Balthasar, *A Theology of History* (Sheed), Daniélou, *God and the Ways of Knowing* (Meridian), Henkey (ed.), *Loyola Quodlibets 1964* (Palm), Maertens, *The Breath and Spirit of God* (Fides), Schillebeeckx, *Christ the Sacrament of the Encounter with God* (Sheed), Vatican Council II, *Constitution on the Liturgy* (St. Paul).
Further Readings : Von Balthasar, *Science, Religion and Christianity* (Burns & Oates), Cullmann, *Christ and Time* (SCM), Kelly, *Early Christian Doctrines* (Harper), selected periodical literature.

306 The Theology of the State. Full Course.
A. C. Dechene, Jr.

Interest in the problem of Church and State usually becomes really vital only when open conflict between the two arises. It is the purpose of this course to show that this is by no means a problem connected only with particular historical crises, but one which arises because of the very essence of the Christian faith.

Lectures : 2 hours per week for two terms.

Texts : *The Complete Bible* (Chicago), Bright, *The Kingdom of God* (Abingdon), Congar, *Power and Poverty in the Church* (Helicon), Cullmann, *The State in the New Testament* (SCM), Fremantle, *The Social Teachings of the Church* (Mentor), Fromm, *Marx's Concept of Man* (Ungar), Machiavelli, *The Prince* (Modern Library), Pieper, *Leisure, the Basis of Culture* (Mentor).
Further Readings : McCoy, *The Structure of Political Thought* (McGraw-Hill), Sabine, *A History of Political Theory* (Holt), Voegelin, *The New Science of Politics* (Chicago).

308 The Basis of Morality. Full Course. A. C. Dechene, Jr.
A systematic investigation of the dynamics of the Christian way of life today. These themes will be emphasized : Biblical ethics, theological anthropology, and the nature of contemporary society and its effect upon the individual who wants to follow Christ.

Lectures : 2 hours per week for two terms.
Texts : *The Complete Bible* (Chicago), Bright, *The Kingdom of God* (Abingdon), Frankl, *Man's Seach for Meaning* (Washington Square), Fromm, *The Art of Loving* (Harper), van Kaam, *Religion and Personality* (Prentice-Hall), Rahner, *Nature and Grace* (Stagbook), *The Theology of Death* (Palm), Scheler, *Man's Place in Nature* (Noonday), Tillich, *Morality and Beyond* (Harper).
Further Readings : Beckett, *Waiting for Godot* (Evergreen), Deman, *La prudence* (Editions des Jeunes), Erickson, *Childhood and Society* (Norton), Graham, *Zen Catholicism* (Harcourt), Leclercq, *Christ and the Modern Conscience* (Sheed), Maritain, *Moral Philosophy* (Bles), McGlynn and Toner, *Modern Ethical Theories* (Bruce), Riesman, *The Lonely Crowd* (Yale), Thomas, *Christian Ethics and Moral Philosophy* (Scribner).

410 Colloquium. Full Course. Staff
Individually directed research for Honours students.

GROUP B
SCRIPTURE COURSES

220 Biblical Theology. Full Course. A. Webster

An introductory course with especial emphasis on basic New Testament themes considered in their historical context.
Lectures : 2 hours per week for two terms.
Texts : *The Complete Bible* (Chicago), Bonsirven, *Theology of the New Testament* (Newman).
Further Readings : Gelin, *Key Concepts of the Old Testament* (Deus), Guillet, *Themes of the Bible* (Spire).

223 Theology of the Prophets. Full Course. J. Zalotay

The theological doctrine of the Prophetic Books in the context of Old Testament revelation; the Prophets and Christ.
Lectures : 2 hours per week for two terms.
Texts : *The Complete Bible* (Chicago), Vawter, *The Conscience of Israel* (Sheed).
Further Readings : To be announced.

226 The Pauline Writings. Full Course. E. O'Brien

A historical and theological examination of the New Testament scriptures of St. Paul and the Pauline School.
Lectures : 2 hours per week for two terms.
Texts : *The Complete Bible* (Chicago), Vawter, *The Conscience of Israel* (Sheed).
Theology of St. Paul (Blackwell).
Further Readings : Cerfaux, *The Church in the Theology of St. Paul* (Herder and Herder), Dodd, *The Meaning of Paul for Today* (Fontana), Munck, *Paul and the Salvation of Mankind* (SCM), Schoeps, *Paul, The Theology of the Apostle in the Light of Jewish Religious History* (Westminster).

320 Christ the Fulfilment of the Covenant. Full Course.
W. Bedard

The Covenant of Sinai, constantly broken and constantly renewed, finds its fulfilment in Christ and His members, the true People of God. The course will include a survey, in an ecumenical perspective, of contemporary Jewish and Protestant writers on the Covenant.

Lectures : 2 hours per week for two terms.

Texts : *The Complete Bible* (Chicago), Oesterreicher, *The Israel of God* (Prentice-Hall).

Further Readings : Gelin, *Key Concepts of the Old Testament* (Deus), Giblet, *The God of Israel, the God of Christians* (Desclee), Norris, *God's Own People* (Palm).

HISTORICAL COURSES

332 The Evolution of Theology. Full Course.   E. O'Brien

Christian theology historically considered in its chief representatives from Irenaeus to the present.

Lectures : 2 hours per week for two terms.

Texts : *The Complete Bible* (Chicago), E. O'Brien (ed.), *Readings in the History of Theology* (Loyola).
Further Readings : Daniélou-Marrou, *The First Six Hundred Years* (McGraw-Hill), Oberman, *The Harvest of Medieval Theology* (Harvard), Reinisch (ed.), *Theologians of Our Time* (Notre Dame).

333 Development of Christian Thought. Full Course.
G. O'Brien

The focal point will be the emerging concept of the Church, its life, its institution, its content, departing from Vatican II and considering the crisis of Integralism and Modernism, the drama of the declaration of Papal Infallibility in the century of Liberalism and Nationalism, the rise of Protestantism, the dissolution of the basic medieval concepts, the great Schism and the contribution of the early general councils.

Lectures : 2 hours per week for two terms.

Texts : Burns (ed.), *Mission and Witness* (Newman), G. O'Brien (ed.), *Readings in the History of Ideas* (Loyola), Vatican Council II, *Constitutions on the Church* and *Ecumenism* (St. Paul).

Further Readings : Butler, *The Idea of the Church* (Helicon), Hastings, *One and Apostolic* (Darton), Küng, *Structures of the Church* (Nelson), Mirgeler, *Mutations in Western Christianity* (Palm), and others to be announced.

335 Patrology. Full Course.   Sr. Mary Peter

A study of the Fathers and Ecclesiastical Writers of the early Church with selected readings from their works illustrative of their significance as witnesses to the doctrines of Christianity.

Lectures : 2 hours per week for two terms.

Texts : Dirksen, *Elementary Patrology* (B. Herder) [for Honours students, Altaner, *Patrology* (Herder and Herder)], Sr. Mary Peter (ed.), *Readings in Patrology* (Loyola).

Further Readings : Daniélou-Marrou, *The First Six Hundred Years* (McGraw-Hill), Kelly, *Early Christian Doctrines* (Harper), selected readings from *Ante-Nicene, Nicene and Post-Nicene Fathers* (Eerdmans).

336 Doctrinal Instruction of Christians in the Early Church. Full Course.   Sr. Mary Peter

A study of the content and method of instruction in Christian doctrine according to St. Cyril of Jerusalem, St. Ambrose, St. John Chrysostom, and St. Augustine and other early Christian writers. Central to the course will be the Christian commitment as emphasized by these great teachers.

Lectures : 2 hours per week for two terms.

Texts : St. Ambrose, *On the Sacraments and on the Mysteries* (Loyola), St. Augustine, *First Catechetical Instruction* (Newman), St. Cyril of Jerusalem, *Catechetical Lectures* (Loyola), St. John Chrysostom, *Baptismal Instructions* (Newman).
Further Readings : Selected readings from *Ante-Nicene, Nicene and Post-Nicene Fathers* (Eerdmans).

AUTHOR COURSES

208 An Introduction to Newman. Full Course.   A. Webster

The course will begin with the autobiographical writings and move from the Sermons through the controversies to his fully developed theological inquiries.

Lectures : 2 hours per week for two terms.

Texts : *Apologia* (Image), *Essay on Development* (Image), *Grammar of Assent* (Image), *Parochial and Plain Sermons* (Longmans).
Further Readings : To be announced.

242 Origen. Full Course.   J. Zalotay

His theology of grace, especially sanctifying contemplation.
Lectures : 2 hours per week for two terms.
Text : Zalotay (ed.), *Readings in the Theology of Origen* (Loyola).
Further Readings : To be announced.

348 Teilhard de Chardin. Full Course.   C. H. Henkey

The objections of contemporary materialism to the Christian world-view and existence could not formerly be answered by the correct but one-sided insistance on the priority and importance of spiritual (eschatological) and moral values. The real answer consists in the theological penetration and integration of the evolutionary and historical dimensions of existence. Teilhard de Chardin's genius was the first to achieve such integration by the ordering into one line of ascending evolution towards the point Omega of matter-life-reason and love.
The purpose of our study is to translate the insights of Teilhard's prophetic and poetic vision into the more objective language of systematic theology.

Lectures : 2 hours per week for two terms.

Texts : *The Future of Man* (Harper), *The Milieu Divin* (Fontana), *The Phenomenon of Man* (Harper).
Further Readings : Crespy, *La pensée théologique de Teilhard de Chardin* (Presses Universitaires), Cuénot, *Teilhard de Chardin* (Helicon), de Lubac, *La pensée religieuse du Père Teilhard de Chardin* (Aubier), Wildiers, *Teilhard de Chardin* (Presses Universitaires).
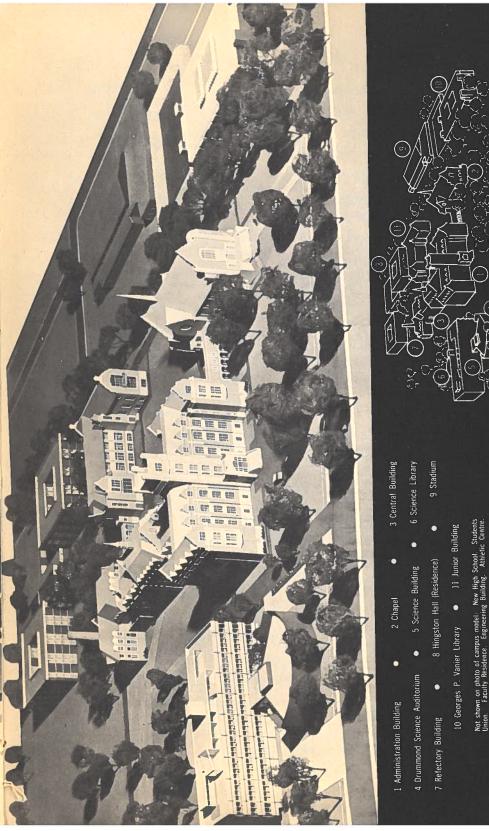
Courses leading to the Honours B.A. in Theology.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
English 101	French	Philosophy	Philosophy
French	Philosophy	Social Science	THEOLOGY
Classics 102 or 121	Classics 202	Elective (1)	Electivas (3)
Mathematics 101	or 221 or 222	THEOLOGY	
History 101	THEOLOGY	Electives (3)	
THEOLOGY 101	Electives (3)		

Courses leading to a B.A. with the Major in Theology.

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
The same as in	French	Philosophy	Philosophy
the Honours	Philosophy	Elective (1)	Philosophy
Theology	Classics 202	Social Science	Elective (1)
programme.	or 221 or 222	Elective (1)	Social Science
	English	THEOLOGY	Elective (1)
	THEOLOGY	Electives (2)	THEOLOGY
	Electives (2)		Electives (2)

COMPUTING CENTRE

1 Administration Building   2 Chapel   3 Central Building
4 Drummond Science Auditorium   5 Science Building   6 Science Library
7 Refectory Building   8 Hingston Hall (Residence)   9 Stadium
10 Georges P. Vanier Library   11 Junior Building

Not shown on photo of campus model: New High School, Students
Union. Faculty Residence. Engineering Building. Athletic Centre.

LOYOLA COLLEGE   7141 SHERBROOKE ST. WEST,   MONTREAL, TEL. 488 – 9551

index

index

index

index

index